17959/B

F. III
19/c

The Dispensary.
Nelson Street.
Newcastle on Tyne
1879.

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A

COLLECTION OF PAPERS,

INTENDED TO PROMOTE

AN INSTITUTION

FOR THE

CURE AND PREVENTION OF INFECTIOUS FEVERS

IN

NEWCASTLE AND OTHER POPULOUS TOWNS.

TOGETHER WITH

THE COMMUNICATIONS OF THE MOST EMINENT PHYSICIANS,

RELATIVE TO

THE SAFETY AND IMPORTANCE

OF ANNEXING

FEVER-WARDS

TO THE

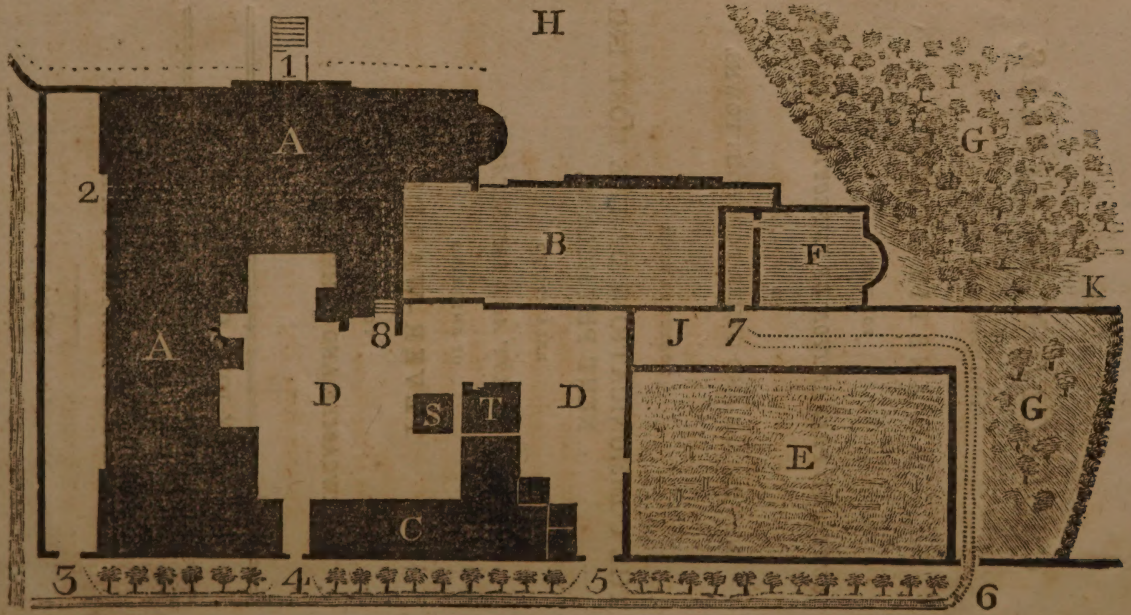
NEWCASTLE AND OTHER INFIRMARIES.

BY JOHN CLARK, M. D.

NEWCASTLE: PRINTED BY S. HODGSON.

1802.

Sketch of the Basement-Story of the Newcastle Infirmary, its new Wards and Fever-house.



7170

Explanation of the References in the Plan.

AA. Old Infirmary.
B. Infirmary New Wards.
C. Out-offices to the Old Building one story high.
DD. Yard to the Old Building.
E. Burial ground, which ought to be removed.
F. Fever-house annexed to the New Building.
GG. Shrubbery.
H. Lawn before the Infirmary.
J. Yard to the Fever-house intended to be separated, by a wall, from the yard to the Old Building.
K. Intended wall to separate the lawn and part of the shrubbery from the passage to the Fever-house.
S. Safe to the Old Building.
T. Fever-room to the Old Building; the door of which is 42 feet distant from the back door of the Infirmary, No. 8.

No. 1. South front entrance to the Infirmary.
2. Common entrance to the Old Building.
3. Passage gate to the Old Building.
4. } Back gates to the Old Building, for admitting carts,
5. } &c. which are kept shut at other times.
6. Door of the intended passage leading to the Fever-house.
7. Door of the Fever-house.
8. Back door to the Old Building.

Distance from No. 2 to 3, — 103 feet.
3 to 4, — 61 do.
4 to 5, — 84 do.
5 to 6, — 100 do.
6 to 7, — 120 do.

468

Distance from No. 2, the common entrance to the Old Building, to No. 7, the door of the Fever-house,—468 feet.

PREFACE.

MANY of the following Papers were sent to the press some time ago, with a view of presenting to the public the Newcastle Infirmary as a model for the improvement of similar establishments: But the decision of the Governors, at a Special Court, held on the 24th of June, 1802, has so unexpectedly limited the powers it was intended to possess, of mitigating human misery, by preventing the fever-house from being opened for the general reception of patients, that it cannot, under the present circumstances, be held out as a pattern worthy of imitation.

The collecting together and publishing all the papers that have been circulated on the occasion, it is hoped, may still be of use. By exciting a spirit of investigation in other populous towns, it may be the means of suggesting improvements and alterations in the old Infirmaries, many of which are extremely defective,—and of annexing to them fever-houses, which have incontestably been proved to be of infinite more service to the poor, and to all ranks of society, than every other department of these charitable institutions.

It is to be regretted, that a plan, which promised to be so extensively useful, should have failed of being carried into effect; and that this failure should have been owing to some of the medical officers of the cha-

rity, is a circumstance involved in such obscurity, that any attempt to unravel so sudden and so singular an opposition would have proved ineffectual. Before he enters upon the perusal of the following Papers, it may not be improper to present the reader with a short historical detail of facts; in which he will find that every measure was regularly proposed, and carried into execution in such a manner, as appeared to be calculated to secure the most perfect unanimity.

A Special Court being held on the 6th of November, 1801, for the purpose of confirming and reprinting the old statutes and rules, which, still after revisal, appeared to me very defective, I proposed several alterations and improvements in the regulations for the future government of the Charity; the chief of which were as follow:—

1st, The members of the Weekly Committee being the efficient managers of the Infirmary, and their regular meetings having long fallen into disuse, it was proposed that this Committee should consist of twelve *ordinary members*, chosen from the Governors residing in Newcastle and Gateshead; and that six of these should go out annually, at the General Court in *April*, and *six new* members be elected in their stead; and that there should be also *thirty-six extraordinary* members nominated, as directed in the old statutes, at each Quarterly Court.

That the important duties of the Weekly Committee might in future be regularly performed, it was suggested that a printed letter should be sent to each ordinary member of the Committee, immediately upon his appointment, notifying the same, and containing also instructions for conducting the usual proceedings.

2d, That vacancies in the medical department may be supplied with the greatest possible advantage to the charity, it was proposed, that, in case of competition for the office of physician or surgeon, no Governor should promise his vote in favour of any particular candidate, till he had considered the comparative merits and character of all who offered themselves; and that when there was a vacancy in the office of house surgeon, every candidate should produce testimonials of having studied medicine, anatomy, and surgery, and of his being acquainted with the general mode of hospital practice.

3d, To prevent the Infirmary being converted into an alms-house, which had often happened from a defect in the old regulations,—its funds from being injudiciously expended, by admitting patients labouring under diseases which are either aggravated by confinement in an hospital, or may be treated with equal advantage out of it, it was proposed that the physicians and surgeons should be the sole judges, when a proper object was recommended, whether he should be received as an *in* or as an *out*-patient; and that they should hold monthly consultations on the cases of the patients in the house, in order that they should be dismissed, if their complaints did not appear to admit of considerable relief by a longer residence in the hospital.

4th, The Infirmary having no Hall or Waiting-room for the out-patients, who attend their physicians and surgeons every Monday morning, and who have hitherto been assembled in the surgery, communicating with the prescribing-room, it was proposed, that one half of the number of patients should attend their respective physicians and surgeons every *Monday*, and the other half every *Wednesday*; and that the women

should be admitted into the prescribing-room before the men *.

5th, Having frequently observed many of my patients, whose cases would probably have admitted of a speedy cure in a quiet and pure ward, become suddenly worse when placed in crowded apartments, especially amongst patients labouring under violent contusions, malignant ulcers, mortifications, and gangrenes, —and that they suffered from currents of air, so necessary to prevent its entire vitiation, it was proposed, that the medical and surgical patients should be separated from each other; that they should be arranged according to the similarity of their diseases; and that effectual measures should be adopted for securing the most essential requisites of an hospital, viz. cleanliness and ventilation.

6th, To improve professional knowledge, it was proposed, that medical and surgical journals should be kept; that monthly and annual tabular returns should be constructed; and that a room should be appropriated in the Infirmary for depositing anatomical preparations, for the reception of medical and surgical books, and anatomical plates.

The suggestion of the above improvements appeared of so much importance to the Special Court already mentioned, held on November 6th, 1801, and which

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* The former arrangement was truly indelicate; for two or three patients, of different sexes, were frequently admitted into this small room, 20½ by 12½ feet,—and interrogated by their respective physicians, in the hearing of the parties. In the improved Infirmary, there will be proper and commodious consulting-rooms for both physicians and surgeons,—and a hall for the patients, with a window from the shop for the delivery of the medicines.

consisted of above twenty Governors, that they unanimously resolved " that a Committee should be appointed to take the statutes, rules, and orders, into consideration,—and to frame such a Code for the future conduct of the Charity as should appear to them necessary and expedient, from change of circumstances, and from the improved knowledge of hospital arrangements.

" That the Committee consist of the Rev. Dr Prosser; N. Walton, Esq.; Rev. Jonathan Walton; Rev. John Fawcett; Thomas Gibson, Esq.; Wm Lloyd, Esq.; John Davidson, Esq.; R. H. Williamson, Esq.; N. Clayton, Esq.; and the *physicians* and *surgeons* of the Charity who are Governors.—That it be an instruction to such Committee to request the advice and assistance of the *physicians* and *surgeons* who are not Governors; and that the Committee lay the result of their labours before the next Quarterly Court, or, at latest, before the General Court in April."

This Committee having framed a New Code (in which they adopted the proposed improvements, together with many important regulations, suggested to the writer in a correspondence with several eminent physicians, and by perusing the works of Drs Aikin, Percival, Rollo, and of the Committee of the Royal Society of Medicine at Paris), presented it to the GENERAL COURT, held April 2d, 1801,—together with a Report, explanatory of the principal alterations, additions, and improvements, contained therein.

The manuscript copy of the Code of Statutes and Rules was ordered, by the General Court, to lie upon the table in the hall of the Infirmary, for private examination; the Explanatory Report was read, ordered

to be printed, and a copy addressed to every Governor and Subscriber; and a Special Court appointed to be held on the 25th of June, 1801, for the purpose of taking into consideration, and, if approved, of confirming the said Code of Statutes and Rules.

Previous to the meeting of this Court, observing a general lukewarmness towards the important arrangements proposed in the New Code, I transmitted to every Governor and Subscriber a paper, containing the result of an inquiry into the state of various Infirmaries, a comparative view of the success of the practice in the improved and in the old Infirmaries, and a proposal for the improvement and extension of the Infirmary.—*(See Circular Letter, in the Collection, p. 206.)*

At the Special Court held on the 25th of June, 1801, the New Code was unanimously confirmed; and in consequence of the remarks contained in the above paper, a Committee of Governors, together with the physicians and surgeons of the Charity, was appointed, for the purpose of considering the expediency of the proposed internal improvement of the Infirmary, —procuring plans of the proposed extension of the building, and estimates of the expense attending the same,—and causing a Report of their proceedings and opinions thereon to be printed, and circulated amongst the Governors, previous to their Anniversary Meeting in August.

On the 21st of July, the Committee circulated their Report *(see Collection, p. 223)* amongst the Governors; and deposited, in the hall of the Infirmary, for their inspection, the plan and elevation of the extension of the building, which had the following words, '*Fever-ward*,' marked in every story of the fever-

house. No objection was offered to any part of the Report, except by Dr Wood; and his objections appeared to the Committee to be frivolous. The whole of the plan seemed to have met with the concurrence of the rest of the physicians, and of all the surgeons; and even Dr Wood made no objection to the fever-wards.

At a Special Court, held on August 4th, 1801, (Sir M. W. Ridley, Bart. M. P. in the Chair) after mature deliberation, and examination of the plans and elevation of the proposed new building, the following motions were made by Sir J. E. Swinburne, Bart.,—unanimously agreed to,—and a Committee appointed, including the physicians and surgeons of the Charity, with full powers to carry into effect the objects contained in the aforesaid Report:—

1st, "That this Court, being of opinion that the Infirmary, in its present state, is but ill calculated to answer the benevolent purposes of such an institution, do approve of the Report of the Committee, dated 21st July.—*(See Supplement to the Collection, p. 223.)*

2d, "That a subscription be entered into, for the purpose of carrying into execution the plan proposed by the said Committee.

3d, "The following gentlemen, in addition to the former Committee *(see page 222)*,—viz. Sir M. W. Ridley, Bart. M. P.; C. J. Brandling, Esq. M. P.; the Hon. C. Grey, M. P.; T. R. Beaumont, Esq. M. P.; Sir R. Milbanke, Bart. M. P.; Rowland Burdon, Esq. M. P.; the Mayor of Newcastle; Samuel Lawton, Esq.; and the Rev. Fred. Ekins,—were appointed a Committee for improvement, with full powers to carry into effect the objects contained in the Report."

As soon as the extension and improvement of the Infirmary appeared likely to receive the sanction of the Governors, the writer of this Preface commenced a correspondence with the physicians of many of the best-conducted Hospitals and Infirmaries in the kingdom; and also obtained plans of the Northampton and Glasgow new Infirmaries, and of the Royal Hospital at Woolwich. From these plans, with the assistance of Mr John Stokoe, an ingenious architect, the new wards were constructed; to which a commodious fever-house was annexed; and without which every Infirmary must be very defective.

After the building was begun, I still continued my correspondence; and spared neither trouble nor expense to obtain information, with a view to improve the Infirmary in every respect, but more especially with regard to ventilation. By Sir Geo. O. Paul, Bart. several improvements were suggested. In the internal arrangement of the wards and rooms, considerable deviations from the first plan were found necessary; but these were effected without much additional expense, except the flooring the garret of the new building, which made room for the accommodation of 20 fever patients instead of 12. But all these improvements were presented to the Committee, and received its sanction, before the architect had orders to carry them into execution.

Fever-wards having been thus constructed sufficiently large for general accommodation, nothing farther appeared necessary to eradicate febrile contagion, than the formation of a Board of Health, to carry rules of prevention into the habitations of the poor, and to provide a fund for the support of patients recommended, and received into the fever-house annexed to the Infirmary.

In the end of January, 1802, the following Governors were appointed a Committee, and summoned regularly to meet at the Dispensary, in order to promote an institution in Newcastle for the cure and prevention of contagious fevers; an object of great magnitude,—but which, it was hoped, might be carried into complete effect, by the aid of the parishes in Newcastle and Gateshead, and by the co-operation of the Governors of the Infirmary and Dispensary:—Rev. Dr Prosser; William Hargrave, Esq.; Isaac Cookson, Esq.; Mr Lloyd; Mr Lawton; Mr J. Anderson; Mr Leighton; Nathaniel Clayton, Esq.; Ralph Atkinson, Esq.; Mr J. Langlands; Mr Harvey; Dr Clark; Mr John Atkinson; Mr Ormston; Mr Barras; Mr Doubleday.

The above Committee having circulated their proceedings *(see the first paper in the following Collection)*, and having appointed the 5th of May, 1802, to receive the result of the deliberations of the Vestry Meetings respecting parochial aid, for carrying the plan into execution,—it was judged to be of great importance to be able to inform the Vestries respectively, that patients under contagious fevers would be admitted into the fever-house annexed to the Infirmary, provided the BOARD of HEALTH, when formed, would engage to pay the average cost of each person received on their recommendation. An application was made to the Weekly Committee of the Infirmary, requesting them to signify, by a notice sent to the Dispensary previous to the 5th of May, that they (the Members of the Committee) would recommend the measure to a General Court of the Governors of the Infirmary. The Committee submitted the propriety of the measure to the consideration of the physicians and surgeons of the Infirmary. Here the opposition commenced!!!

Much stress having been laid on the manner in which the fever-wards were proposed, and some obloquy, since the decision of the last Special Court, having been thrown on the Committee for Improvement, or rather on the writer of this Preface, for the introduction of *two words* into the Report, *(see page 191, in the Supplement)*, it will be necessary in this place to enter into some explanation.

" To the west end of the new building, it is proposed to annex two wards with six bedsteads each, and two wards with two bedsteads each, together with a kitchen, wash-house, and water-closet, for infectious fevers of accidental occurrence. There will be a door at the end of the gallery, communicating with the staircase belonging to these wards, for the convenience of removing patients from the Infirmary; but which afterwards will be kept shut, to prevent contagion from spreading."

The words *accidental occurrence* were made use of in the Report with no intention to deceive the Governors concerning the *design* of the fever-wards, but merely to prevent the agitation of the question of Contagion, which, from the want of proper information, had in several other places occasioned much alarm, upon the proposal of similar improvements. This I never concealed,—but, at the first reading of the Report before the Committee, explained the reason for using these words, " accidental occurrence;" adding, that if any groundless alarms should go abroad relative to the imaginary chance of contagion being carried from the fever-wards to the Infirmary, that it would probably prevent supplies being raised for the proposed improvements.

That any Governor should mistake the extensive purpose of these wards, appears to me singular: That

the door was to be kept *locked* to prevent contagion from spreading to the Infirmary, implied that the wards were likely to be filled; and if such an idea presented itself to any timid person so as to produce an alarm, upon being satisfied that the fever-wards, when the door was kept *locked*, would be possessed of all the advantages of a *distinct* and *separate* house, and therefore could not communicate contagion, tranquillity would be easily restored: That no alarm would have really happened, had no medical opposition taken place, it is reasonable to conclude, from the following circumstance:—

A military hospital has subsisted in Vine-lane, Newcastle, since the 16th of December, 1801. This hospital is one of the best houses in that lane, where the buildings are continued in a line. At the time it was opened, a contagious fever was prevalent amongst the soldiers. One room or ward in this house was set apart for fevers exclusively. There was only the staircase between it and the entrance into the other wards.—"There have been six patients," says the surgeon, "at one time in the fever-ward, all extremely ill; and the other wards, at the same time, completely full with patients labouring under other complaints: Yet I can with great truth assert, that, since the above period (viz. from December 16th, 1801, to July 1st, 1802), there was not one man in any of the other wards seized with any symptom of fever."

The above facts rest on the authority of the regimental surgeon, whose professional and moral character stands very high in the estimation of those who have the pleasure of his acquaintance. No infection has been communicated to the inhabitants of the neighbouring houses from this hospital; no public nor private alarm has been occasioned by it; but certainly

much evil has been prevented: For had these soldiers, ill of fevers, been quartered in the public houses in the town, or, more probably, in private lodgings, in the ill-aired habitations of the poor, the contagion would undoubtedly have spread, and occasioned great misery.

Having shewn that no Governor who perused the Report of the Committee with attention (and much less a Medical Governor) could be mistaken concerning the real intention of the fever house, I shall now offer the most positive proofs that one of the gentlemen in the opposition was fully acquainted with my sentiments long before he declared his disapprobation of the measure.

In the beginning of March last, in the familiarity of friendship, I read most part of the *Proceedings of the Committee for promoting an institution for the cure and prevention of contagious fevers in Newcastle and Gateshead*, and afterwards gave it to him for private perusal, with a request that he would offer objections, if he had any, or suggest improvements. The copy contained a note, pointing out the fever-house of the Infirmary as being well calculated for a house of recovery. This gentleman, after I had finished reading, approved of the proceedings; and at that time, as well as at subsequent casual meetings, we consulted on the most proper mode of the BOARD of HEALTH, when established, of acquiring a right to recommend patients to the fever-house; namely, that they should pay to the Infirmary the average cost of each patient for maintenance and medicines. Notwithstanding our frequent intercourse and conversation respecting the Infirmary, I never had reason to doubt, before the beginning of May, that we differed in any particular concerning the arrangements of the Hospital. The pur-

port of these conversations the writer has repeatedly mentioned to his friends; and he now publicly states it, from no other motives than to bring it to the recollection of that gentleman, and a consciousness that he owes it to his own character.

Having presented the reader with a faithful historical account of the proceedings relative to the fever-house of the Infirmary, I shall now offer a few explanatory remarks on the Papers, in the order in which they appear in the following Collection.

The Paper with which this little volume commences, contains a description of the complicated miseries of the poor, in Newcastle and Gateshead, in consequence of contagious fevers; which will apply to other large towns, in proportion to their respective states of population, to the comparative wretched condition of their dwellings, and to the cleanliness observed by the police.

The outlines of the plan contained in this Paper may also be adopted, with slight variation, to the use of other populous towns; and it is hoped that the arguments in favour of parochial aid may have their due weight with their enlightened inhabitants.

In the Appendix to this Paper, are printed, *verbatim*, the writer's "*Remarks on the Means of preventing the Generation and Propagation of Contagious Fevers in Newcastle and Gateshead;*" which were read before the Committee of Governors of the Dispensary, on the 6th of November, 1793, convened to consider Dr Ramsay's "*Observations on the Spreading of Contagious Fevers, with a Plan for checking their Progress.*"—(See Collection of Papers, p. 23 and 26.)

Dr Ramsay's plan was warmly recommended to the Governors of the Dispensary by the Medical Society, of which the present physicians and surgeons to the Infirmary were members; and it is remarkable, that the fever-wards, suggested by Dr Ramsay, were proposed to be incorporated with the Infirmary. How far the assertion of Dr Wood is just, that the writer was at that time a decided enemy to fever-wards, is left to the determination of the candid reader.—*(See Dr Wood's second Address to the Governors of the Infirmary, page 170 of the Collection.)*

The second division of the "Collection of Papers" contains the Report of the Committee of Governors of the Dispensary, when the opposition to the fever-house commenced,—and also the writer's Letter to the Weekly Committee; both of which were transmitted to the Governors of the Infirmary, individually, to furnish them with practical facts to enable them to form a judgment concerning the safety, the utility, and importance of the measure proposed.

The third division of the Collection contains communications from physicians of distinguished characters; from which it will appear, that the names of HAYGARTH, CURRIE, GREGORY, FALCONER, HEYSHAM, FERRIAR, BARDSLEY, HOLME, BRIGGS, BEDDOES, WALKER, HAMILTON, RUTHERFORD, CLEGHORN, BLANE, WILLAN, GARTHSHORE, COOKE, STANGER, MURRAY, SIR WALTER FARQUHAR, LATHAM, LETTSOM, BAILLIE, WILLIAMS, WARDELL, LIND, SAUNDERS, and PEARSON, are respectively affixed, in testimony of the safety and importance of fever patients being received into Hospitals and Infirmaries, provided they be placed in *distinct* and *separate wards*, and simple regulations be observed to prevent

their intercourse with the other patients, and to secure cleanliness and ventilation.

The testimonies of these distinguished physicians, it must be observed, do not rest on the uncertain foundation of theory, but are the result of accurate observation and experience.

To the above testimonies I shall add the evidence of Dr Rollo, Surgeon-General to the Royal Hospital at Woolwich; where the wards, though numerous, are small; and where those allotted for contagious fevers are only separated from the others by a partition.—"A patient, with his clothes, admitted with a disease infectious, having undergone the washing and cleaning of his person, and the lodgment of his clothes in the oven to be baked, then fumigated and scoured, is put into a separate ward, or into one with a patient having a similar disease. All intercourse is prevented, except what is indispensible, by a sentinel placed on the outside of the door of the gallery. By these simple means, invariably prosecuted, infection does not spread in this Hospital."

By a tabular view of the whole number of patients, viz. 7526, admitted during a period of five years, it appears that 381 laboured under fevers, of whom 17 died. By the same table, it also appears, that, out of the whole number of patients admitted, under all diseases, during the above period, deducting trivial cases, that only 1 in 35 died; a striking proof that the admission of patients, under fevers, into *separate* and *distinct wards*, though even in the same hospital, does not add to its insalubrity: For, of all similar institutions, this appears to be one of the most successful.—*(See a Short Account of the Artillery Hospital at Woolwich, by Dr Rollo, p. 73, 116.)*

The third and fourth divisions of the Collection contain all the letters, addressed to the Governors of the Infirmary, relative to the proposition for opening the fever-house; and the opinions of the physicians and surgeons, respecting the propriety of the measure, delivered to the Special Court on the 24th of June.

The moment I saw that a contest was likely to take place, I withdrew myself from the meetings of the Committee of the Infirmary. I did not solicit one single vote; nor did I write one word in favour of the measure,—except my letter, dated June 16th, addressed to the Weekly Committee. I never, it must be confessed, expected that a question of reason and humanity could require party interest, but trusted that it would be decided according to the evidence of facts and experience. Even when I observed papers signed by one of the physicians, and one of the surgeons of the Infirmary, stating facts, which might either have been easily controverted, or applied in favour of the safety of the fever-house, I abstained from publication, well knowing that the disputes of medical men, as usually conducted, lead to personal resentment, bring the combatants into contempt, and seldom serve the cause of truth, nor the interests of the profession.

In this Preface, however, which is intended to be circulated amongst the Governors of the Infirmary, as well as prefixed to the Collection of Papers, I shall endeavour to shew that all the facts, worthy of notice, produced by the opposition, clearly prove the safety and necessity of opening the fever-wards for the general reception of the poor.

Upon the limited sphere of contagion rests the practicability of its prevention, and consequently the utility of fever-wards. If contagion spread as far as the op-

position suppose, on their principle no town would be safe during the existence of infectious fevers, in whatever part of it fever-wards might be placed: The truth is, on such a principle, fever-wards would be of no use.

To prove the extensive range of contagion, the opposition have fixed on the most virulent jail fevers which have occurred in the annals of the English history, viz. those of the assizes of Oxford in 1577, and of the Old Bailey in 1750: They rest chiefly upon the latter; but they do not inform the Governors that all the unfortunate persons who received this virulent infection in a crowded court, after they went home to their respective houses, where so great a number of them died, did not communicate the contagion to one single person who attended them in their own clean bedchambers; where the means of prevention, from not being so well understood as at present, could not be carried into such complete execution as in the fever-house annexed to the Infirmary: And surely nothing can more fully shew the necessity of annexing fever-wards to every Infirmary, where contagion is so apt to be introduced, than that, by the very same measures being followed in our jails, no instance has happened of contagion having been communicated to the inmates of prisons, to courts of justice, nor even carried into the country by the return of debtors, where the regulations of the benevolent Howard have been adopted and carried into effect. Before the reform of Mr Howard was adopted, prisoners were perpetually, upon their return from jails, carrying home infection, and spreading it into the country. And I must further add, that, if the prisoners at the Old Bailey had been washed and dressed in clean clothes before they had been brought into court, no infection would have been communicated; for none of the prisoners who

were tried had laboured under jail fever; their clothes only were infected.

But the safety of receiving such fevers as have occurred in jails, in ships, and in the habitations of the poor, into distinct wards, within or annexed to Infirmaries, has been sufficiently proved by all the physicians whose names have already been mentioned: And here I shall add the testimony of Dr Lind, of Haslar Hospital,—whose opportunities of making observations must be greater than what falls to the lot of any individual physician in the kingdom.

"In Haslar hospital, where, during war, the number of contagious diseases is greater than can be expected in any private institution, the fever-wards are, in each wing, connected by a piazza to the rest of the hospital, and employ, without inconvenience, the common kitchen, wash-house, and other offices.

"Observation does not warrant the apprehension that contagion might be communicated to the Infirmary, from the windows of the fever-wards, through the medium of the external air; with due ventilation and cleanliness, contagion would seldom be considerable in these wards, and in the free air, beyond very confined limits, even strong contagion would lose its power of exciting disease.

"A remarkable proof of this occurred during my attendance on Forton prison in 1780. In March and April, near 3000 prisoners were received at Forton, 1769 Spaniards, and 1206 French, and in successive detachments most of them forwarded to other prisons. Forton, in the mean time, became sickly; for above three weeks it was very crowded; afterwards the num-

ber of prisoners was reduced to nearly 800 Spanish, and 200 French.

" The Spanish prisoners brought with them a typhus fever, which, during the crowded state of Forton, spread both in the prison and hospital. The contagion was so strong, that, at the expiration of ten days, of 27 of the Spanish prisoners employed to attend their sick, only one had escaped the fever; out of 23 nurses and labourers, 22 were either sick or dead; the barber and four interpreters, in succession, there being only one interpreter allowed at a time upon the books. The contagion continued seventeen weeks, and absorbed among the Spanish all other diseases. During that period, 785 Spaniards were admitted into the hospital, including re-admissions, and 156 died.

" The French were confined in the same general prison with the Spanish, were lodged at night in separate wards, but used through the day the same common airing ground, kitchen, and offices. From a national aversion, the Spaniards would not permit a Frenchman to associate with them. Thus situated, the French, in a great measure, escaped the contagion; few of them had fevers, and the fevers of those few were in general slight. During the whole period of the contagion, only 5 French prisoners died.

" At the same time 229 Americans were confined in another part of Forton prison; they were not allowed any intercourse with the other prisoners, but the hospital which contained the sick Spaniards ranged along one side of their airing ground, separated only by a narrow cartway, and had near the ceiling of each ward ventilators, opening towards their airing ground. These Americans remained perfectly free from contagion; not one American died during the four months

in which the contagion prevailed so severely among the Spaniards."

Dr Blane, Dr Hunter, and Dr Wardell, as will appear by the Collection of Papers, all of whom have been physicians in the navy or army, and have superintended naval and military hospitals, likewise confirm the safety and advantage of fever-wards, even within Infirmaries.

The yellow fever of the West-Indies and North-America was brought forward by Mr Horn to the Special Court *(see Collection, p. 198)*, to prove the extensive range of contagion, and the impracticability of rules of prevention. "How many dreadful instances," says he, "of its ravages may be brought from the West-Indies and North-America; where the yellow fever has destroyed many thousands, and where contagion has been spread to a distance far beyond the limits of this Hospital, from effluvia arising from infected bodies, clothes, ships, &c. conveyed by the wind."—"Surely, when its ravages *(see Collection, p. 200)* were so much dreaded, that, in Philadelphia, *even parents forsook their children*, when they were seized with this distemper, *every known precaution* would be used: And can it possibly be supposed, that the disease could be diffused so very widely, under such circumstances, if *almost* actual contact was required for its production?"

Without insisting that scarcely *any* proper precaution could be taken, when parents deserted their children, during the terrific rage of the yellow fever, I shall endeavour to prove that its contagion, like that of all other fevers, was very limited,—and that, by proper regulations, its propagation might have been easily prevented.

From the concurrent testimony of all the writers upon this pestilence, it appears certain, that, when the sick, ill of the fever, were carried into the country, the disease never spread to the family where they lodged: And even in Philadelphia, where the dying and dead were deserted by their nearest relations, and, consequently, from this cause, contagion increased to the greatest degree of virulence, there is no reason to believe (nay, it is contrary to all facts established respecting contagion) that, in the open air, the disease could be communicated at a greater distance than a few feet from the source of the poison. Had it extended to the distance of twenty or thirty feet in the open air, it would, like a conflagration, have spread suddenly over the whole city, and even the country* in a very short time. But we find how limited the contagion was in the city of Philadelphia, from the following fact:—

"The jail of Philadelphia is under such excellent regulation, that the disorder made its appearance there only in two or three instances, although such abodes of misery are the places where contagious disorders are most commonly generated. When the yellow fever raged most violently in the city, there were in the jail 106 French soldiers and sailors, confined by order of the French Consul, besides 80 convicts, vagrants, and persons for trial; all of whom, except 2 or 3, remained perfectly free from the complaint. Several circumstances have conspired to produce this salutary effect. The people confined are frequently cleansed and purified by the use of the cold bath—they are kept con-

* This pestilence never visited any other town in America, than the sea-ports.

stantly employed—vegetables form a considerable part of their diet—in the yard, vegetation flourishes—and many of them being employed in stone-cutting, the water, constantly running, keeps the atmosphere in a moist state, while the people of Philadelphia have been uninterruptedly parched up by unceasing heat. Elijah Weed, the late jailor, caught the disorder in the city, in the performance of paternal duties towards his daughter, and died in the jail, without communicating it to any of the people confined."

Like other contagious fevers, the American pestilence was dreadfully destructive to the poor. Carey, an eye-witness, who distinguished himself for active benevolence, and personal assistance to the sick, observes, that "the inhabitants of dirty houses have severely expiated their neglect of cleanliness and decency, by the numbers of them that have fallen sacrifices: Whole families, in such houses, have sunk into one silent, undistinguishing grave. It is very probable, that at least seven-eighths of the number of the dead were of that class."—"The mortality in confined streets, small alleys, and close houses, debarred of free circulation of air, has exceeded, in great proportion, that in large streets and well-aired houses. In some of the alleys, a third or a fourth of the whole inhabitants are no more!"—By comparing this with the quotation in the preceding paragraph, it may be inferred, that the contagious miasms of the yellow fever of Philadelphia only contaminated the air to a very limited distance, —nay, that they did not render the air of a whole house, or even of a whole chamber, infectious.

The College of Physicians give the clearest evidence, that the disease was imported from the West-Indies: Therefore it is reasonable to conclude, that the great terror, misery, and devastation, committed by this pes-

tilence, might have been certainly prevented, by taking the first persons seized with it into any of the hospitals provided with fever-wards in Philadelphia, and by purifying the first-infected ship and house.

Warned by the fatal effects of neglecting purifications of infected ships and houses, on the appearance of the malignant fever of Philadelphia, the Americans have lately adopted proper rules for exterminating contagion on its first introduction.—In June and July, 1801, several ships returned to New-York, crowded with wretched emigrants from Ireland. A most virulent fever raged during the voyage, of which 30 and even 40 died in a single ship. The ships, the bedding, and the persons of the crews, are represented to have been in a state of filth and disease, too shocking to delicacy here to be related. Mr Bayley, the health officer, caused the clothes and bedding to be cleaned, or, if not worth cleaning, to be thrown into the bay: The sick were carried to the Marine Hospital on Staten-Island, and were distributed as widely from each other as circumstances would allow; and cleanliness and ventilation were carried to the utmost extent. The consequence of this management was, that, as soon as the regulations could be carried into effect, "*the poisonous effluvia issued from them no longer.*"—"It is worthy of being remembered, that emigrants from Ireland, landing immediately in the city, instead of being detained at the Marine Hospital, filled New-York with death and terror, in 1795."

The Medical Repository of New-York, from which the above account is extracted, contains another instance of pestilence, engendered in the ship Nancy, of 202 tons, from Sligo, crowded with 417 passengers. The vessel became sickly soon after sailing from Sligo;

a typhus fever and a dysentery became prevalent; and 90 persons died during the voyage. The state of this ship exhibited a still more shocking scene than the former. When she arrived at New-York, 180 were sick; and many had suffered from three or four relapses. About 40 were taken ill after their arrival. The sick were immediately stripped, washed, then wrapt up in clean blankets, and carried to the Marine Hospital; which not being capable of receiving so great a number, tents and other temporary accommodations were provided for the remainder. "*Separation, ventilation, and cleanliness, accomplished every thing that could be expected;* and only 26 died after their arrival at this port." After the power of ventilation and cleanliness in rendering innoxious the effluvia arising from so many patients under the most virulent infection, can any person, except under the influence of ill-founded fears, entertain a doubt of the complete safety of the fever-wards annexed to the Newcastle Infirmary.

In order to shew that the contagion of fever is not confined to so narrow limits as Dr Haygarth and others have proved, Mr Horn adduces instances from the West-Indies, where ships, by being moored to the *windward* of another ship where the master *believed there was a contagious disease*, and *by confining his people to their own ship*, never buried a man; "whilst in ships that did not use the same precautions, the mortality has been dreadful!" How does this prove that mooring to the windward was of any use, or that the range of contagion was extensive? *Was not confining the people to their own ship*, and allowing no sick person nor tainted clothes to be brought on board (which would be undoubtedly a restriction imposed by so cautious and so intelligent a man as Captain Renwick) *alone* sufficiently effectual means for preventing the introduction of contagion.

But Mr Horn proceeds—" The Winchester, Captain Bruce, carrying eighteen people, entered the harbour of *Port Morant* along with Mr Renwick, in high health,—and brought up to the leeward of the Henry, at about seventy fathoms distance. This last ship had been so severely afflicted with the yellow fever, as to bury ten out of her complement of twenty men. She lay exactly to the windward of Mr Bruce's ship, with her ports open, to allow a free current; and the effluvia *conveyed by these means* so affected the Winchester's crew, as to occasion the death of seven of them in seven days." A person must be very credulous, whilst there appear more likely means of the contagion having been received directly from the sick on shore by personal intercourse, who will allow this instance as a proof of contagion having been *blown* to the distance of seventy fathoms in the open air.

Mr Horn still proceeds farther—" Nearly the same thing occurred in the ship Orion, whose crew was perfectly healthy whilst she lay to the *windward* of the Duckinfield, where the sickness raged, until, by accident, getting entangled with that ship, and to the *leeward* only for a few minutes, until the ships were cleared of each other, the disease made its appearance, and carried off ten of the people." The near intercourse between the seamen of two entangled ships is so obvious, that this instance certainly is a proof of the limited sphere of contagion, if the disease was caught from the Duckinfield.

But if contagion could really have been introduced into these ships *in the manner* Mr Horn so confidently asserts, it has no application to the *fever-house* annexed to the Infirmary, where no contagion can subsist at a few feet from the patients; for, by completely wash-

ing them before they are admitted, contagion is either destroyed, or rendered inert; and by ventilation and cleanliness afterwards constantly observed, the effluvia arising from the bodies of the patients are so diluted as to become innocent.

The mooring of ships to the windward appears to be a most unnecessary and useless precaution towards the prevention of receiving contagion of *so limited a range* as that arising from the bodies of men, and of infected ships. The calms which inevitably take place, and the sea and land breezes, alter the relative situations of ships; and therefore such moorings can give no security. The practice of mooring to the windward, from having been found of the utmost service in the prevention of fevers, arising from marshy effluvia, seems to have been adopted without consideration; and such an error, as it may occasion quarrelling amongst masters of ships, ought not to be passed over without notice.

" Nothing," says the judicious Dr Currie, in a letter to the Editor, " seems to be more firmly established than the narrow sphere of even the most virulent contagions, where the air is allowed to circulate freely. Hence, in the torrid zone, where the heat of the atmosphere in a manner forces ventilation, the infectious quality of the most malignant fevers is a matter of dispute among the Faculty, though I believe with yourself and Dr Wright, (the present worthy President of the College of Physicians at Edinburgh) that, under a similar deficiency of ventilation, they would be equally or more infectious than the fevers of our northern latitude. Dangers that cannot be calculated, are always magnified by the imagination; and the baleful influence derived to the atmosphere, from taking

its constant course over extensive swamps of many thousand acres of putrifying animal and vegetable matter, has been loosely applied to the same air passing over a human body, for a thousandth part of the time, and a millionth part of the surface. Yet the testimony of all actual observers, in every region of the earth, is calculated to correct this error. Even the sphere of contagion of the plague, the most terrible of the diseases which affect the human species, seems limited to a very few feet, or even inches, in a free circulation of the air; and it might be received into your projected fever-ward with safety to the patients of the Infirmary, if we may believe the concurrent testimony of Savary, Bruce, Russel, and of Antes, the most recent and satisfactory of them all."

I shall continue the quotation from my correspondent a little farther, to shew that it does not, as Mr Horn would wish the Governors to believe, require medical abilities to judge of the propriety of the question before them.—"It is a folly to pretend that this subject is of a professional nature, and not cognizable by any fair understanding. The facts are numerous, —the inference easy. It is only necessary for unprejudiced men to make themselves masters of the first; the last, seems to me, inevitable. Even those who will not take the trouble of obtaining the information necessary to inform their own judgments, might regulate their conduct safely by conforming to the usual maxim on similar occasions,—that of adhering to the opinion of those who are likely to be best informed. That persons, the business of whose lives is to observe and to combat the effects of contagion, should be best acquainted with its laws, and their evidence best entitled to weight, in a question depending on those laws, are propositions that no one will dispute; and the force of which can only be eluded by shewing

that, on the point at issue, they have an interest likely to pervert their judgment or their evidence. But what peculiar interest have the faculty in institutions for the prevention of disease, unless, indeed, the honourable reputation they may derive from serving the community? What interest have members of the faculty, already in the possession of public confidence, in committing their reputation to hazard in the support of plans of a dangerous nature? If such plans succeed, their effects cannot be concealed; and if they turn out to be such as their opposers prophecy, they must destroy the reputation of their supporters."

It would much exceed the limits of this Preface to point out the great advantage which has accrued to medical science, and to the public, from the labours of gentlemen not of the profession. But it is known to the whole universe what COOKE effected in the navy towards the preservation of the health of seamen; and what HOWARD has accomplished in our prisons. A grand work of benevolence still remains for some future philanthropist, who, without fear, shall survey parish workhouses and private receptacles of afflicted indigence, and suggest to the Legislature an adequate remedy for preventing the propagation of contagion: like another HOWARD, his name will be consecrated in the admiration of posterity.

It will surely appear a little extraordinary to the intelligent reader, that none of the medical gentlemen in the opposition have attempted to bring facts from their own observation and experience, to prove the danger of annexing fever-wards to the Infirmary. This being impossible, they have only produced vague assertions, and partial extracts from one or two authors of reputation, knowing that it would be an easy

task to suggest weak fears, and excite groundless alarms.

" Let any unprejudiced person," says Mr Horn, " read the works of Dr Lind, of Haslar hospital, whose opportunities of tracing infection have been superior to those of most men, and he will find by *what unthought-of ways* it may be communicated: Where a few infected blankets have been clearly proved to have cut off a whole nation of Indians: Where, when, as Dr Lind says, A SMALL SPARK of contagion, once introduced into a fleet, and by the sick from that fleet to the town of Brest and its vicinity, more than 10,000 people, besides 5 physicians, 150 surgeons, and 200 almoners and nurses, fell victims to its rage, with many slaves, who, by a promise of their liberty, were engaged to assist the sick."

Dr Lind, in the above quotation, warns his reader of the *danger;* but Mr Horn should not have kept back the *security.* Dr Lind says, in the same book, that " the infection extends itself at no great distance;" that " the houses in the neighbourhood of an infected prison are in no danger of infection;" that " the body of the diseased, kept clean and neat, is not so liable to impress the taint, as his late wearing apparel, dirty linen, and uncleanliness of all sorts." The Doctor points out the means by which infection may be easily and effectually destroyed in any soft substance, ship, or house.—In short, let the very work be read from which Mr Horn takes the quotation, and it will be found that the late celebrated Dr Lind points out nearly the same methods of eradicating and preventing the spread of contagion, as have been proposed to be followed by a Board of Health, on opening the fever-house annexed to the Infirmary.

Dr Lind, moreover, in the work which Mr Howard quotes, shews the small danger in attending the sick, when cleanliness and ventilation are steadily enforced; he says, "that he never himself found the least symptom of infection, altho', for several years, he daily attended persons labouring under contagious diseases."—"That, in eighteen months, only FIVE persons died out of more than ONE HUNDRED *constantly employed as nurses*; of these one died through a decay of nature; one had been an irregular drunken man; one was not treated as directed; and the other two were victims to their own indiscretion, having concealed, under their beds, the clothes from persons violently infected."—"When the sick are collected, they should be arranged into two classes; the slightly infected, and those with constant fevers."—"It seldom happens in the jail distemper, that one third of the patients infected are so ill as to be totally confined to bed. By making this separation, the sphere of contagion will be greatly contracted, since I am inclined to believe, that patients, with a very slight* infection, when kept perfectly clean, and in well aired apartments, do not communicate disease."—*(Lind's Essay on the Health of Seamen, with Considerations on the Jail Distemper, p. 351.—See also interesting Letters from Dr Blane, Dr J. Hunter, and Dr Currie, in this Collection.)*

Sir George O. Paul, Bart. near twenty years ago, in a very interesting pamphlet†, from measures and ideas

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* Multiplied experience has clearly decided, since the edition of Dr Lind's book, 1774, that persons in the most malignant state of fevers, under such circumstances, never communicate contagion, except from contact, or a very near approach.

† See Thoughts on the alarming progress of the Jail Fever, with Rules for the Treatment of the diseased, and Means to be used to prevent its further Communication, 1784. This little tract was printed

respecting the prevention of contagion interspersed in this very work of Dr Lind, formed a few simple rules of proceeding, which may be easily practiſed either by an *individual family*, or by *the officers of any parish*, who may think proper to enter into a general undertaking. The jail fever, previous to this publication, had been often communicated to many parts of the county of Gloucester, by the return of debtors from prison; but since that period, and especially since the erection of the new jail, the distemper has been eradicated, and its generation prevented. It is much to be wished that this distinguished writer should be induced to republish his pamphlet, for the benefit of large towns, where contagious fevers constantly prevail. His arguments, so strongly and judiciously stated, could not fail to have weight with vestries, and with benevolent individuals, in promoting the formation of Boards of Health, and in annexing Fever-wards to every Hospital and Poor-house in the kingdom: By such a publication, country gentlemen might be enabled to secure themselves, and the parishes in which they reside, from the spread of contagion, when introduced from populous towns.

Mr Horn, in his hasty research into facts to present to the Governors of the Special Court, produces some instances from my own works, with the view, it is presumed, of shewing them that I had contradicted myself. —"Read the note at the foot of Dr Clark's circular letter, and see if his own quotation, from his own works, does not make strongly for this argument, and shew *he* thought, that contagion would spread to a greater distance than Dr Haygarth's limits." "My attention

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for the use of parish officers, and other inhabitants in the county of Gloucester. It only fell into the hands of the Editor a few weeks ago, being presented to him by the Author.

(says Dr Clark) was struck by the *humane and wise conduct* of the commander of the Salisbury: by anchoring his ship at a *little distance* from the rest of the fleet, and allowing *no intercourse with sickly ships*, he preserved his crew in health at Bengal, in the year 1768."—*(See Dr Clark's Letter, and also his Observations on Fever, p.* 391.)—"A further search into the Doctor's works will still more strongly confirm this; for in his Treatise on Diseases of Hot Climates, pages 151, 152, no less than ten instances are given, in which even a common ague, a disease not generally supposed contagious, was found highly so."

With respect to the instance of the Indiaman, no person who peruses my works, can believe that I was ever of the opinion of such extreme caution being necessary; nay, if he will take the slightest glance of the chapter on the means of preventing and subduing infection, *(See Observations on Long Voyages, &c. p.* 537, *printed* 1792,) he will be convinced, that I thought nothing more required to secure these important ends, than removing the sick from those in health to the most airy part of the vessel, and injoining strict attention to cleanliness and ventilation.

The instances of agues being infectious, alluded to by Mr Horn in the above quotation, were given as curious and rare occurrences; but they are in no manner applicable to the support of his arguments. The contagion, in all the instances which I traced, was received either from contact, or from exposition to the vapour arising from the body in the hot stage; and in the Infirmary, the persons infected were in beds contiguous to the patient who communicated the distemper. The cake of ginger-bread, an instance afterwards adduced of the unlimited range of contagion, was daubed with variolous matter, wrapt up in paper, in

this state carried 17 miles, and infected a child by whom a piece of it was eaten, *(see Haygarth's Sketch, p. 419)*: The same consequence would have followed, had it been carried 17,000 miles.

Having, it is hoped, proved, in a satisfactory manner, that the facts brought forward by the opposition, when fully stated, are expressly in favour of the safety and importance of opening the fever-house annexed to the Infirmary, I shall dismiss this part of my subject with the following reflections:—I have considered it to be an incumbent duty to support my principles and practice against every attack; and more especially, when the overturn of such principles and practice is calculated to abridge the benevolent designs of a Charity I have so ardently endeavoured to improve. I lament exceedingly, that any difference in opinion should have arisen amongst the medical officers on a point where no room, I apprehended, could have been left for doubt; and I peculiarly regret, that the two surgeons in the opposition, with whom I have been in long habits of friendship, and who have in other professional matters of the utmost importance rested on my judgment, should have on this occasion withheld their confidence.

I should be deficient in gratitude, were I not to offer the warmest acknowledgments to my numerous correspondents, who have, in so obliging a manner, favoured me with important information,—to many of whom I am not personally known. To a few, whose names do not appear in this publication, the only apology I have to offer, is, that, although they expressed their fullest approbation of the measure, and ardent wishes for its completion, their letters did not contain facts stated from personal experience. From two phy-

sicians only I have not yet received answers to my inquiries; but, from publication, I can assert that both are warm friends for establishing fever-wards, not only annexed to hospitals, but *within* hospitals, when exclusively appropriated to that purpose.—Such coincidence of opinion and practice, and such unity of sentiment, scarcely ever before accompanied a correspondence on any medical question.

Should the fever-house be opened for general reception, it is contended, on the part of the opposition, that it will be in direct violation of the 15th rule; and, notwithstanding the judicious observations of a Governor (*see his letter, in the Collection, p.* 124), I must beg leave to offer a few remarks on the subject.

The rule runs thus:—"That no woman big with child, no person labouring under insanity, the small-pox, or other infectious distemper, afflicted with cancer not admitting of operation, consumption, scrofula, or dropsy in the last stage, judged to be incurable, or in a dying condition, shall be admitted in-patients on any account."—This rule is taken from the London hospitals, where the patients recommended live in the vicinity; but such a rule must often be infringed, when applied to county infirmaries. When a patient is sent from a distance, and in so weak a state as to be unable to undergo a second journey, he must be admitted into the house, whatever be the nature or state of his complaint: Nay, even when a patient is able to return to his home, urged by the entreaty of the sufferer, and unwilling to offend a distant subscriber, who seldom makes use of his privilege of recommending, the receiving physician or surgeon cannot refuse admission. Hence the Infirmary is often crowded with patients, in the incurable states of many of these *forbidden* diseases; and any Governor, by taking a survey of the wards,

will observe, that the house almost always contains a number of incurable diseases, and also a number of patients capable of receiving equal relief out of the Infirmary, although the latter are kept in, in express violation of the 16th *rule*.

With respect to fevers, I have observed *(see Collection, p. 47)*, that they often are received into infirmaries, masked under the form of rheumatism and catarrh: Nay, I will go farther—Since I belonged to the Charity, I never rejected a patient because he laboured under evident symptoms of low fever: Other physicians, nay, I believe all of them, have done the same.

From the above circumstances, it is evident that this rule can be of no farther use than as an admonition to the physician, that he ought not to depart from it, except in urgent cases.

If the infringement of the 15th rule be attended with no possible disadvantage to the other patients, as has been proved, when an Infirmary has separate and distinct wards for the reception of fevers, and that such wards are capable of doing infinitely more good than all the other parts of the building, there can be nothing so *sacred* in this rule, but that it should be annulled as far as respects the admission of fever patients into wards set apart for that purpose.

It has been urged, that opening the fever-house for the resident poor will place the distant Governors on an unequal footing with those who live near the Infirmary. This, necessarily, must always be the case; for those who reside in the vicinity of an hospital, are most likely to be first called upon for letters of recommendation. But it is sufficiently obvious to every observer,

that the Governors who reside at a distance, would support the Charity from motives of humanity only; for they seldom recommend the number of patients they are entitled to. The admission of fevers into the house annexed to the Infirmary, and the prevention of contagion spreading into the country, is perhaps the only way in which distant Governors can receive advantage from the Infirmary.

If it were necessary, I could adduce many instances of contagion being carried into the country by patients or their clothes, but never by the air, to the distance of five, ten, and twenty, nay, to above one hundred miles from Newcastle: But after so much has been presented to the Governors on this subject, "the dignity of truth would be hurt by too much protesting."

To this Preface is prefixed an accurate sketch of the basement story of the Infirmary, its new wards and fever-house; from which the attentive observer cannot fail to be convinced, that the most scrupulous attention has been paid to prevent the least risk of contagion being communicated to the Infirmary; from which, indeed, it will be more effectually secured, than it was on the old establishment.

From the sketch it will appear, that, from No. 2, the common entrance to the old building, to No. 7, the door of the fever-house, the distance is 468 feet; whereas, from the old fever-room, T, to No. 8, the back door of the Infirmary, the distance is only 42 feet. —From the sketch it will also appear, that the outgrounds of the Infirmary and fever-house are intended to be separated by a wall, which will effectually prevent the possibility of intercourse with the old house; whereas the present fever-room, wretchedly calculated for the purpose, is in the yard of the Infirmary, where

patients are constantly passing its door.—The fever-house will have its own distinct nurses, who will not be allowed to enter the Infirmary on pain of dismission from service,—and it has also its own kitchen; whilst the present fever-room is attended by one of the nurses of the common wards, and the patient ill of fever receives his food and drink from the kitchen of the Infirmary *.

Soon after the decision of the Special Court, I turned my thoughts towards the propriety of proposing a Fever-house and Dispensary, to be erected in some airy situation; but the more I considered the subject, the more I was deterred from making the proposal †. If such an edifice were erected by subscription, it would, no doubt, be a public benefit; and I now sincerely wish that such a proposal had been made, before so much money had been unnecessarily expended.

But as such a project would now likely prove abortive, as it would not have the advantages of the one rejected; and more especially as the present fever-

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* With all these disadvantages, no instance has occurred, in the memory of the present officers of the Charity, of contagion having been communicated from the fever-room. Since this room has been occupied by the workmen engaged in the building, two patients have actually died of typhus in the common wards of the Infirmary, without communicating the disease to one single person.

† While we are speculating on the propriety of increasing the numbers of medical charities, when our present subsisting ones are in a state of decline, things are managed differently in other places. Convinced of the safety, and with a view to economy, at ETRURIA in Staffordshire, where the population is estimated to exceed 30,000 inhabitants, (created in a few years under the fostering auspices of the *Wedgewoods*, names which ever must be revered by this country) it is in contemplation, at the present moment, to erect a Dispensary, Fever-wards, and an Infirmary, connected by galleries, under the same roof.

house, in a little time, will be found useless to the Infirmary, and serve only to sink its declining funds, I am deterred from recommending it.

The Infirmary, without the fever-house, from various improved internal arrangements, besides dining-rooms for each sex, when finished, will have excellent accommodations for 108 patients. If *four* beds be kept *always in readiness* for the reception of medical cases of consequence, and *six* for surgical accidents, (accommodations necessary for every Infirmary, but which the old building never enjoyed) there will still remain room for 98 patients, independent of the fever-house, as will appear from a plan of the internal arrangement of the house, drawn by the architect.

The number of beds, by the Report of the Committee appointed the 5th of June, is limited to 84, exclusive of those in the fever-wards: Let it be supposed that 80 patients, upon an average, should be constantly in the house, and seven successions take place in one year, (the usual average in the old Infirmary) this will give 560 patients as the annual number admitted. But in the improved Infirmary, from more suitable accommodations, it is reasonable to believe that eight successions will take place in the course of the year, which will give 640 in-patients. From this calculation, it will appear, that when 10 beds are kept in readiness for the reception of medical and surgical cases, and that when 80, the limited number, are at one time in the house, there will then remain 18 beds, which will afford ample opportunities of changing the wards, and of answering every other useful purpose.

I cannot conclude without declaring, that ever since I belonged to the Infirmary, from defect and inatten-

tion to the statutes and rules, it has been in a complete state of disorganization. There has been no general co-operation, no regular system of management. The new statutes and rules appear to be well calculated to remedy these evils, and the acting weekly Committee, since the new arrangements, have laboured diligently to carry them into execution. The task, however, seems to be difficult, for notwithstanding the 21st statute enacts, that the number of patients admitted and discharged, and a return of the diseases of the in-patients, should be comprised in every annual Report, yet no such articles appear in that which was lately distributed at the anniversary meeting. The rules for professional conduct, agreed to by the Physicians and Surgeons, *(see New Code of Statutes, p 30)* confirm the importance and necessity of monthly and annual returns; and without them, indeed, it cannot be known how far any medical charity answers the benevolent design of its supporters.

These are not the complainings of a disappointed man, but of one ardent to raise the Infirmary to the highest pitch of excellence, not to limit its beneficence to the usual object it receives within its walls; but as far as possible to extend its usefulness to the public, and to increase its power towards the improvement of medical science.

Having been honoured in the career of his profession, with the confidence of the public to a degree far beyond his most sanguine expectations, he has every reason to be grateful and contented.

In his endeavours to improve the Infirmary, he with conscious pride declares he was influenced, in a very peculiar manner, by the motive of making the best

return in his power for the distinguished patronage with which he has been favoured. He never once conceived that the measure he proposed, which had received the seal of approbation and safety from long experience, could have occasioned so much alarm.—The fears of the really timid he respects; but will risk his reputation that such fears are ill founded; and he trusts, that the evidence he has adduced, will, upon perusal, implant conviction, and restore tranquillity.

A

COLLECTION OF PAPERS,

INTENDED TO PROMOTE

AN INSTITUTION

FOR THE

CURE AND PREVENTION OF INFECTIOUS FEVERS

IN

NEWCASTLE AND OTHER POPULOUS TOWNS.

TOGETHER WITH

THE COMMUNICATIONS OF THE MOST EMINENT PHYSICIANS,

RELATIVE TO

THE SAFETY AND IMPORTANCE

OF ANNEXING

FEVER-WARDS

TO THE

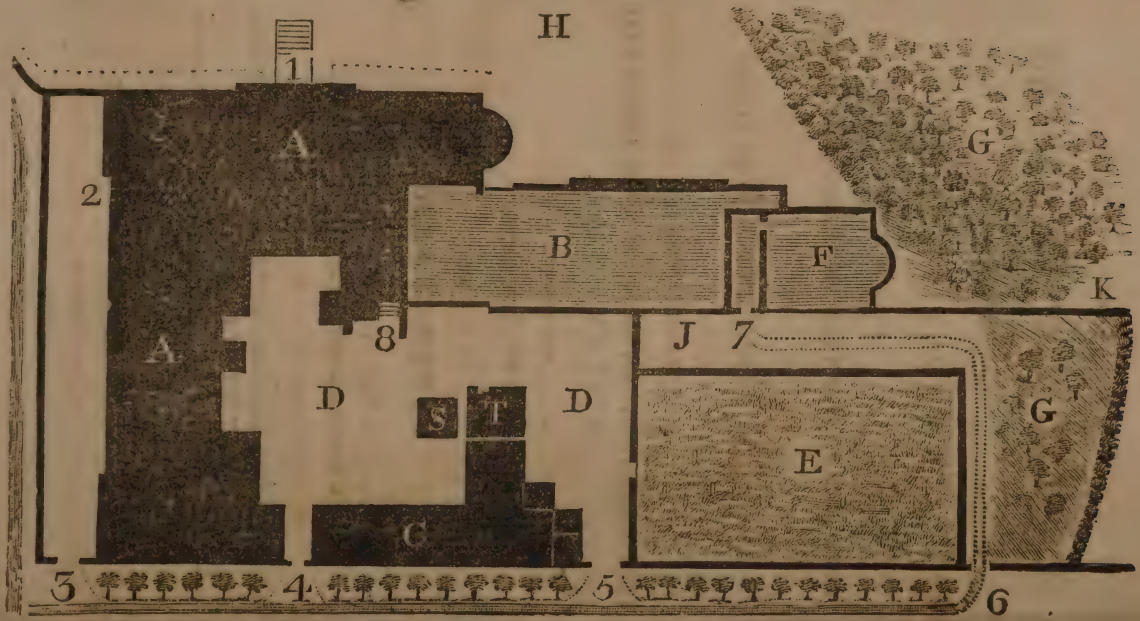
NEWCASTLE AND OTHER INFIRMARIES.

BY JOHN CLARK, M. D.

NEWCASTLE: PRINTED BY S. HODGSON.

1802.

Sketch of the Basement Story of the Newcastle Infirmary, its new Wards and Fever-house.



Explanation of the References in the Plan.

AA. Old Infirmary.
B. Infirmary New Wards.
C. Out-offices to the Old Building one story high.
DD. Yard to the Old Building.
E. Burial ground, which ought to be removed.
F. Fever-house annexed to the New Building.
GG. Shrubbery.
H. Lawn before the Infirmary.
J. Yard to the Fever-house intended to be separated, by a wall, from the yard to the Old Building.
K. Intended wall to separate the lawn and part of the shrubbery from the passage to the Fever-house.
S. Safe to the Old Building.
T. Fever-room to the Old Building; the door of which is 42 feet distant from the back door of the Infirmary, No. 8.

No. 1. South front entrance to the Infirmary.
2. Common entrance to the Old Building.
3. Passage gate to the Old Building.
4. } Back gates to the Old Building, for admitting carts,
5. } &c. which are kept shut at other times.
6. Door of the intended passage leading to the Fever-house.
7. Door of the Fever-house.
8. Back door to the Old Building.

Distance from No. 2 to 3, — 103 feet.
3 to 4, — 61 do.
4 to 5, — 84 do.
5 to 6, — 100 do.
6 to 7, — 120 do.
468

Distance from No. 2, the common entrance to the Old Building, to No. 7, the door of the Fever-house,—468 feet.

PREFACE.

MANY of the following Papers were sent to the press some time ago, with a view of presenting to the public the Newcastle Infirmary as a model for the improvement of similar establishments: But the decision of the Governors, at a Special Court, held on the 24th of June, 1802, has so unexpectedly limited the powers it was intended to possess, of mitigating human misery, by preventing the fever-house from being opened for the general reception of patients, that it cannot, under the present circumstances, be held out as a pattern worthy of imitation.

The collecting together and publishing all the papers that have been circulated on the occasion, it is hoped, may still be of use. By exciting a spirit of investigation in other populous towns, it may be the means of suggesting improvements and alterations in the old Infirmaries, many of which are extremely defective,—and of annexing to them fever-houses, which have incontestably been proved to be of infinite more service to the poor, and to all ranks of society, than every other department of these charitable institutions.

It is to be regretted, that a plan, which promised to be so extensively useful, should have failed of being carried into effect; and that this failure should have been owing to some of the medical officers of the cha-

rity, is a circumstance involved in such obscurity, that any attempt to unravel so sudden and so singular an opposition would have proved ineffectual. Before he enters upon the perusal of the following Papers, it may not be improper to present the reader with a short historical detail of facts; in which he will find that every measure was regularly proposed, and carried into execution in such a manner, as appeared to be calculated to secure the most perfect unanimity.

A Special Court being held on the 6th of November, 1801, for the purpose of confirming and reprinting the old statutes and rules, which, still after revisal, appeared to me very defective, I proposed several alterations and improvements in the regulations for the future government of the Charity; the chief of which were as follow:—

1st, The members of the Weekly Committee being the efficient managers of the Infirmary, and their regular meetings having long fallen into disuse, it was proposed that this Committee should consist of twelve *ordinary members*, chosen from the Governors residing in Newcastle and Gateshead; and that six of these should go out annually, at the General Court in *April*, and *six new* members be elected in their stead; and that there should be also *thirty-six extraordinary* members nominated, as directed in the old statutes, at each Quarterly Court.

That the important duties of the Weekly Committee might in future be regularly performed, it was suggested that a printed letter should be sent to each ordinary member of the Committee, immediately upon his appointment, notifying the same, and containing also instructions for conducting the usual proceedings.

2d, That vacancies in the medical department may be supplied with the greatest possible advantage to the charity, it was proposed, that, in case of competition for the office of physician or surgeon, no Governor should promise his vote in favour of any particular candidate, till he had considered the comparative merits and character of all who offered themselves; and that when there was a vacancy in the office of house surgeon, every candidate should produce testimonials of having studied medicine, anatomy, and surgery, and of his being acquainted with the general mode of hospital practice.

3d, To prevent the Infirmary being converted into an alms-house, which had often happened from a defect in the old regulations,—its funds from being injudiciously expended, by admitting patients labouring under diseases which are either aggravated by confinement in an hospital, or may be treated with equal advantage out of it, it was proposed that the physicians and surgeons should be the sole judges, when a proper object was recommended, whether he should be received as an *in* or as an *out*-patient; and that they should hold monthly consultations on the cases of the patients in the house, in order that they should be dismissed, if their complaints did not appear to admit of considerable relief by a longer residence in the hospital.

4th, The Infirmary having no Hall or Waiting-room for the out-patients, who attend their physicians and surgeons every Monday morning, and who have hitherto been assembled in the surgery, communicating with the prescribing-room, it was proposed, that one half of the number of patients should attend their respective physicians and surgeons every *Monday*, and the other half every *Wednesday;* and that the women

should be admitted into the prescribing-room before the men *.

5th, Having frequently observed many of my patients, whose cases would probably have admitted of a speedy cure in a quiet and pure ward, become suddenly worse when placed in crowded apartments, especially amongst patients labouring under violent contusions, malignant ulcers, mortifications, and gangrenes, —and that they suffered from currents of air, so necessary to prevent its entire vitiation, it was proposed, that the medical and surgical patients should be separated from each other; that they should be arranged according to the similarity of their diseases; and that effectual measures should be adopted for securing the most essential requisites of an hospital, viz. cleanliness and ventilation.

6th, To improve professional knowledge, it was proposed, that medical and surgical journals should be kept; that monthly and annual tabular returns should be constructed; and that a room should be appropriated in the Infirmary for depositing anatomical preparations, for the reception of medical and surgical books, and anatomical plates.

The suggestion of the above improvements appeared of so much importance to the Special Court already mentioned, held on November 6th, 1801, and which

* The former arrangement was truly indelicate; for two or three patients, of different sexes, were frequently admitted into this small room, 20½ by 12¾ feet,—and interrogated by their respective physicians, in the hearing of the parties. In the improved Infirmary, there will be proper and commodious consulting-rooms for both physicians and surgeons,—and a hall for the patients, with a window from the shop for the delivery of the medicines.

consisted of above twenty Governors, that they unanimously resolved " that a Committee should be appointed to take the statutes, rules, and orders, into consideration,—and to frame such a Code for the future conduct of the Charity as should appear to them necessary and expedient, from change of circumstances, and from the improved knowledge of hospital arrangements.

" That the Committee consist of the Rev. Dr Prosser; N. Walton, Esq.; Rev. Jonathan Walton; Rev. John Fawcett; Thomas Gibson, Esq.; Wm Lloyd, Esq.; John Davidson, Esq.; R. H. Williamson, Esq.; N. Clayton, Esq.; and the *physicians* and *surgeons* of the Charity who are Governors.—That it be an instruction to such Committee to request the advice and assistance of the *physicians* and *surgeons* who are not Governors; and that the Committee lay the result of their labours before the next Quarterly Court, or, at latest, before the General Court in April."

This Committee having framed a New Code (in which they adopted the proposed improvements, together with many important regulations, suggested to the writer in a correspondence with several eminent physicians, and by perusing the works of Drs Aikin, Percival, Rollo, and of the Committee of the Royal Society of Medicine at Paris), presented it to the GENERAL COURT, held April 2d, 1801,—together with a Report, explanatory of the principal alterations, additions, and improvements, contained therein.

The manuscript copy of the Code of Statutes and Rules was ordered, by the General Court, to lie upon the table in the hall of the Infirmary, for private examination; the Explanatory Report was read, ordered

to be printed, and a copy addressed to every Governor and Subscriber; and a Special Court appointed to be held on the 25th of June, 1801, for the purpose of taking into consideration, and, if approved, of confirming the said Code of Statutes and Rules.

Previous to the meeting of this Court, observing a general lukewarmness towards the important arrangements proposed in the New Code, I transmitted to every Governor and Subscriber a paper, containing the result of an inquiry into the state of various Infirmaries, a comparative view of the success of the practice in the improved and in the old Infirmaries, and a proposal for the improvement and extension of the Infirmary.—*(See Circular Letter, in the Collection, p. 206.)*

At the Special Court held on the 25th of June, 1801, the New Code was unanimously confirmed; and in consequence of the remarks contained in the above paper, a Committee of Governors, together with the physicians and surgeons of the Charity, was appointed, for the purpose of considering the expediency of the proposed internal improvement of the Infirmary, —procuring plans of the proposed extension of the building, and estimates of the expense attending the same,—and causing a Report of their proceedings and opinions thereon to be printed, and circulated amongst the Governors, previous to their Anniversary Meeting in August.

On the 21st of July, the Committee circulated their Report *(see Collection, p. 223)* amongst the Governors; and deposited, in the hall of the Infirmary, for their inspection, the plan and elevation of the extension of the building, which had the following words, '*Fever-ward*,' marked in every story of the fever-

house. No objection was offered to any part of the Report, except by Dr Wood; and his objections appeared to the Committee to be frivolous. The whole of the plan seemed to have met with the concurrence of the rest of the physicians, and of all the surgeons; and even Dr Wood made no objection to the fever-wards.

At a Special Court, held on August 4th, 1801, (Sir M. W. Ridley, Bart. M. P. in the Chair) after mature deliberation, and examination of the plans and elevation of the proposed new building, the following mōtions were made by Sir J. E. Swinburne, Bart.,—unanimously agreed to,—and a Committee appointed, including the physicians and surgeons of the Charity, with full powers to carry into effect the objects contained in the aforesaid Report:—

1st, "That this Court, being of opinion that the Infirmary, in its present state, is but ill calculated to answer the benevolent purposes of such an institution, do approve of the Report of the Committee, dated 21st July.—*(See Supplement to the Collection, p. 223.)*

2d, "That a subscription be entered into, for the purpose of carrying into execution the plan proposed by the said Committee.

3d, "The following gentlemen, in addition to the former Committee *(see page 222)*,—viz. Sir M. W. Ridley, Bart. M. P.; C. J. Brandling, Esq. M. P.; the Hon. C. Grey, M. P.; T. R. Beaumont, Esq. M. P.; Sir R. Milbanke, Bart. M. P.; Rowland Burdon, Esq. M. P.; the Mayor of Newcastle; Samuel Lawton, Esq.; and the Rev. Fred. Ekins,—were appointed a Committee for improvement, with full powers to carry into effect the objects contained in the Report."

As soon as the extension and improvement of the Infirmary appeared likely to receive the sanction of the Governors, the writer of this Preface commenced a correspondence with the physicians of many of the best-conducted Hospitals and Infirmaries in the kingdom; and also obtained plans of the Northampton and Glasgow new Infirmaries, and of the Royal Hospital at Woolwich. From these plans, with the assistance of Mr John Stokoe, an ingenious architect, the new wards were constructed; to which a commodious fever-house was annexed; and without which every Infirmary must be very defective.

After the building was begun, I still continued my correspondence; and spared neither trouble nor expense to obtain information, with a view to improve the Infirmary in every respect, but more especially with regard to ventilation. By Sir Geo. O. Paul, Bart. several improvements were suggested. In the internal arrangement of the wards and rooms, considerable deviations from the first plan were found necessary; but these were effected without much additional expense, except the flooring the garret of the new building, which made room for the accommodation of 20 fever patients instead of 12. But all these improvements were presented to the Committee, and received its sanction, before the architect had orders to carry them into execution.

Fever-wards having been thus constructed sufficiently large for general accommodation, nothing farther appeared necessary to eradicate febrile contagion, than the formation of a BOARD of HEALTH, to carry rules of prevention into the habitations of the poor, and to provide a fund for the support of patients recommended, and received into the fever-house annexed to the Infirmary.

In the end of January, 1802, the following Governors were appointed a Committee, and summoned regularly to meet at the Dispensary, in order to promote an institution in Newcastle for the cure and prevention of contagious fevers; an object of great magnitude,—but which, it was hoped, might be carried into complete effect, by the aid of the parishes in Newcastle and Gateshead, and by the co-operation of the Governors of the Infirmary and Dispensary:—Rev. Dr Prosser; William Hargrave, Esq.; Isaac Cookson, Esq.; Mr Lloyd; Mr Lawton; Mr J. Anderson; Mr Leighton; Nathaniel Clayton, Esq.; Ralph Atkinson, Esq.; Mr J. Langlands; Mr Harvey; Dr Clark; Mr John Atkinson; Mr Ormston; Mr Barras; Mr Doubleday.

The above Committee having circulated their proceedings *(see the first paper in the following Collection)*, and having appointed the 5th of May, 1802, to receive the result of the deliberations of the Vestry Meetings respecting parochial aid, for carrying the plan into execution,—it was judged to be of great importance to be able to inform the Vestries respectively, that patients under contagious fevers would be admitted into the fever-house annexed to the Infirmary, provided the BOARD of HEALTH, when formed, would engage to pay the average cost of each person received on their recommendation. An application was made to the Weekly Committee of the Infirmary, requesting them to signify, by a notice sent to the Dispensary previous to the 5th of May, that they (the Members of the Committee) would recommend the measure to a General Court of the Governors of the Infirmary. The Committee submitted the propriety of the measure to the consideration of the physicians and surgeons of the Infirmary. Here the opposition commenced!!!

Much stress having been laid on the manner in which the fever-wards were proposed, and some obloquy, since the decision of the last Special Court, having been thrown on the Committee for Improvement, or rather on the writer of this Preface, for the introduction of *two words* into the Report, *(see page 191, in the Supplement)*, it will be necessary in this place to enter into some explanation.

"To the west end of the new building, it is proposed to annex two wards with six bedsteads each, and two wards with two bedsteads each, together with a kitchen, wash-house, and water-closet, for infectious fevers of accidental occurrence. There will be a door at the end of the gallery, communicating with the staircase belonging to these wards, for the convenience of removing patients from the Infirmary; but which afterwards will be kept shut, to prevent contagion from spreading."

The words *accidental occurrence* were made use of in the Report with no intention to deceive the Governors concerning the *design* of the fever-wards, but merely to prevent the agitation of the question of Contagion, which, from the want of proper information, had in several other places occasioned much alarm, upon the proposal of similar improvements. This I never concealed,—but, at the first reading of the Report before the Committee, explained the reason for using these words, "accidental occurrence;" adding, that if any groundless alarms should go abroad relative to the imaginary chance of contagion being carried from the fever-wards to the Infirmary, that it would probably prevent supplies being raised for the proposed improvements.

That any Governor should mistake the extensive purpose of these wards, appears to me singular: That

the door was to be kept *locked* to prevent contagion from spreading to the Infirmary, implied that the wards were likely to be filled; and if such an idea presented itself to any timid person so as to produce an alarm, upon being satisfied that the fever-wards, when the door was kept *locked*, would be possessed of all the advantages of a *distinct* and *separate* house, and therefore could not communicate contagion, tranquillity would be easily restored: That no alarm would have really happened, had no medical opposition taken place, it is reasonable to conclude, from the following circumstance:—

A military hospital has subsisted in Vine-lane, Newcastle, since the 16th of December, 1801. This hospital is one of the best houses in that lane, where the buildings are continued in a line. At the time it was opened, a contagious fever was prevalent amongst the soldiers. One room or ward in this house was set apart for fevers exclusively. There was only the staircase between it and the entrance into the other wards.—"There have been six patients," says the surgeon, "at one time in the fever-ward, all extremely ill; and the other wards, at the same time, completely full with patients labouring under other complaints: Yet I can with great truth assert, that, since the above period (viz. from December 16th, 1801, to July 1st, 1802), there was not one man in any of the other wards seized with any symptom of fever."

The above facts rest on the authority of the regimental surgeon, whose professional and moral character stands very high in the estimation of those who have the pleasure of his acquaintance. No infection has been communicated to the inhabitants of the neighbouring houses from this hospital; no public nor private alarm has been occasioned by it; but certainly

much evil has been prevented: For had these soldiers, ill of fevers, been quartered in the public houses in the town, or, more probably, in private lodgings, in the ill-aired habitations of the poor, the contagion would undoubtedly have spread, and occasioned great misery.

Having shewn that no Governor who perused the Report of the Committee with attention (and much less a Medical Governor) could be mistaken concerning the real intention of the fever house, I shall now offer the most positive proofs that one of the gentlemen in the opposition was fully acquainted with my sentiments long before he declared his disapprobation of the measure.

In the beginning of March last, in the familiarity of friendship, I read most part of the *Proceedings of the Committee for promoting an institution for the cure and prevention of contagious fevers in Newcastle and Gateshead*, and afterwards gave it to him for private perusal, with a request that he would offer objections, if he had any, or suggest improvements. The copy contained a note, pointing out the fever-house of the Infirmary as being well calculated for a house of recovery. This gentleman, after I had finished reading, approved of the proceedings; and at that time, as well as at subsequent casual meetings, we consulted on the most proper mode of the BOARD of HEALTH, when established, of acquiring a right to recommend patients to the fever-house; namely, that they should pay to the Infirmary the average cost of each patient for maintenance and medicines. Notwithstanding our frequent intercourse and conversation respecting the Infirmary, I never had reason to doubt, before the beginning of May, that we differed in any particular concerning the arrangements of the Hospital. The pur-

port of these conversations the writer has repeatedly mentioned to his friends; and he now publicly states it, from no other motives than to bring it to the recollection of that gentleman, and a consciousness that he owes it to his own character.

Having presented the reader with a faithful historical account of the proceedings relative to the fever-house of the Infirmary, I shall now offer a few explanatory remarks on the Papers, in the order in which they appear in the following Collection.

The Paper with which this little volume commences, contains a description of the complicated miseries of the poor, in Newcastle and Gateshead, in consequence of contagious fevers; which will apply to other large towns, in proportion to their respective states of population, to the comparative wretched condition of their dwellings, and to the cleanliness observed by the police.

The outlines of the plan contained in this Paper may also be adopted, with slight variation, to the use of other populous towns; and it is hoped that the arguments in favour of parochial aid may have their due weight with their enlightened inhabitants.

In the Appendix to this Paper, are printed, *verbatim*, the writer's "*Remarks on the Means of preventing the Generation and Propagation of Contagious Fevers in Newcastle and Gateshead;*" which were read before the Committee of Governors of the Dispensary, on the 6th of November, 1793, convened to consider Dr Ramsay's "*Observations on the Spreading of Contagious Fevers, with a Plan for checking their Progress.*"—(See Collection of Papers, p. 23 and 26.)

Dr Ramsay's plan was warmly recommended to the Governors of the Dispensary by the Medical Society, of which the present physicians and surgeons to the Infirmary were members; and it is remarkable, that the fever-wards, suggested by Dr Ramsay, were proposed to be incorporated with the Infirmary. How far the assertion of Dr Wood is just, that the writer was at that time a decided enemy to fever-wards, is left to the determination of the candid reader.—*(See Dr Wood's second Address to the Governors of the Infirmary, page 170 of the Collection.)*

The second division of the "Collection of Papers" contains the Report of the Committee of Governors of the Dispensary, when the opposition to the fever-house commenced,—and also the writer's Letter to the Weekly Committee; both of which were transmitted to the Governors of the Infirmary, individually, to furnish them with practical facts to enable them to form a judgment concerning the safety, the utility, and importance of the measure proposed.

The third division of the Collection contains communications from physicians of distinguished characters; from which it will appear, that the names of HAYGARTH, CURRIE, GREGORY, FALCONER, HEYSHAM, FERRIAR, BARDSLEY, HOLME, BRIGGS, BEDDOES, WALKER, HAMILTON, RUTHERFORD, CLEGHORN, BLANE, WILLAN, GARTHSHORE, COOKE, STANGER, MURRAY, SIR WALTER FARQUHAR, LATHAM, LETTSOM, BAILLIE, WILLIAMS, WARDELL, LIND, SAUNDERS, and PEARSON, are respectively affixed, in testimony of the safety and importance of fever patients being received into Hospitals and Infirmaries, provided they be placed in *distinct* and *separate wards*, and simple regulations be observed to prevent

their intercourse with the other patients, and to secure cleanliness and ventilation.

The testimonies of these distinguished physicians, it must be observed, do not rest on the uncertain foundation of theory, but are the result of accurate observation and experience.

To the above testimonies I shall add the evidence of Dr Rollo, Surgeon-General to the Royal Hospital at Woolwich; where the wards, though numerous, are small; and where those allotted for contagious fevers are only separated from the others by a partition.—"A patient, with his clothes, admitted with a disease infectious, having undergone the washing and cleaning of his person, and the lodgment of his clothes in the oven to be baked, then fumigated and scoured, is put into a separate ward, or into one with a patient having a similar disease. All intercourse is prevented, except what is indispensible, by a sentinel placed on the outside of the door of the gallery. By these simple means, invariably prosecuted, infection does not spread in this Hospital."

By a tabular view of the whole number of patients, viz. 7526, admitted during a period of five years, it appears that 381 laboured under fevers, of whom 17 died. By the same table, it also appears, that, out of the whole number of patients admitted, under all diseases, during the above period, deducting trivial cases, that only 1 in 35 died; a striking proof that the admission of patients, under fevers, into *separate* and *distinct wards*, though even in the same hospital, does not add to its insalubrity: For, of all similar institutions, this appears to be one of the most successful.—(*See a Short Account of the Artillery Hospital at Woolwich, by Dr Rollo, p.* 73, 116.)

The third and fourth divisions of the Collection contain all the letters, addressed to the Governors of the Infirmary, relative to the proposition for opening the fever-house; and the opinions of the physicians and surgeons, respecting the propriety of the measure, delivered to the Special Court on the 24th of June.

The moment I saw that a contest was likely to take place, I withdrew myself from the meetings of the Committee of the Infirmary. I did not solicit one single vote; nor did I write one word in favour of the measure,—except my letter, dated June 16th, addressed to the Weekly Committee. I never, it must be confessed, expected that a question of reason and humanity could require party interest, but trusted that it would be decided according to the evidence of facts and experience. Even when I observed papers signed by one of the physicians, and one of the surgeons of the Infirmary, stating facts, which might either have been easily controverted, or applied in favour of the safety of the fever-house, I abstained from publication, well knowing that the disputes of medical men, as usually conducted, lead to personal resentment, bring the combatants into contempt, and seldom serve the cause of truth, nor the interests of the profession.

In this Preface, however, which is intended to be circulated amongst the Governors of the Infirmary, as well as prefixed to the Collection of Papers, I shall endeavour to shew that all the facts, worthy of notice, produced by the opposition, clearly prove the safety and necessity of opening the fever-wards for the general reception of the poor.

Upon the limited sphere of contagion rests the practicability of its prevention, and consequently the utility of fever-wards. If contagion spread as far as the op-

position suppose, on their principle no town would be safe during the existence of infectious fevers, in whatever part of it fever-wards might be placed: The truth is, on such a principle, fever-wards would be of no use.

To prove the extensive range of contagion, the opposition have fixed on the most virulent jail fevers which have occurred in the annals of the English history, viz. those of the assizes of Oxford in 1577, and of the Old Bailey in 1750: They rest chiefly upon the latter; but they do not inform the Governors that all the unfortunate persons who received this virulent infection in a crowded court, after they went home to their respective houses, where so great a number of them died, did not communicate the contagion to one single person who attended them in their own clean bedchambers; where the means of prevention, from not being so well understood as at present, could not be carried into such complete execution as in the fever-house annexed to the Infirmary: And surely nothing can more fully shew the necessity of annexing fever-wards to every Infirmary, where contagion is so apt to be introduced, than that, by the very same measures being followed in our jails, no instance has happened of contagion having been communicated to the inmates of prisons, to courts of justice, nor even carried into the country by the return of debtors, where the regulations of the benevolent Howard have been adopted and carried into effect. Before the reform of Mr Howard was adopted, prisoners were perpetually, upon their return from jails, carrying home infection, and spreading it into the country. And I must further add, that, if the prisoners at the Old Bailey had been washed and dressed in clean clothes before they had been brought into court, no infection would have been communicated; for none of the prisoners who

were tried had laboured under jail fever; their clothes only were infected.

But the safety of receiving such fevers as have occurred in jails, in ships, and in the habitations of the poor, into distinct wards, within or annexed to Infirmaries, has been sufficiently proved by all the physicians whose names have already been mentioned: And here I shall add the testimony of Dr Lind, of Haslar Hospital,—whose opportunities of making observations must be greater than what falls to the lot of any individual physician in the kingdom.

"In Haslar hospital, where, during war, the number of contagious diseases is greater than can be expected in any private institution, the fever-wards are, in each wing, connected by a piazza to the rest of the hospital, and employ, without inconvenience, the common kitchen, wash-house, and other offices.

"Observation does not warrant the apprehension that contagion might be communicated to the Infirmary, from the windows of the fever-wards, through the medium of the external air; with due ventilation and cleanliness, contagion would seldom be considerable in these wards, and in the free air, beyond very confined limits, even strong contagion would lose its power of exciting disease.

"A remarkable proof of this occurred during my attendance on Forton prison in 1780. In March and April, near 3000 prisoners were received at Forton, 1769 Spaniards, and 1206 French, and in successive detachments most of them forwarded to other prisons. Forton, in the mean time, became sickly; for above three weeks it was very crowded; afterwards the num-

ber of prisoners was reduced to nearly 800 Spanish, and 200 French.

" The Spanish prisoners brought with them a typhus fever, which, during the crowded state of Forton, spread both in the prison and hospital. The contagion was so strong, that, at the expiration of ten days, of 27 of the Spanish prisoners employed to attend their sick, only one had escaped the fever; out of 23 nurses and labourers, 22 were either sick or dead; the barber and four interpreters, in succession, there being only one interpreter allowed at a time upon the books. The contagion continued seventeen weeks, and absorbed among the Spanish all other diseases. During that period, 785 Spaniards were admitted into the hospital, including re-admissions, and 156 died.

" The French were confined in the same general prison with the Spanish, were lodged at night in separate wards, but used through the day the same common airing ground, kitchen, and offices. From a national aversion, the Spaniards would not permit a Frenchman to associate with them. Thus situated, the French, in a great measure, escaped the contagion; few of them had fevers, and the fevers of those few were in general slight. During the whole period of the contagion, only 5 French prisoners died.

" At the same time 229 Americans were confined in another part of Forton prison; they were not allowed any intercourse with the other prisoners, but the hospital which contained the sick Spaniards ranged along one side of their airing ground, separated only by a narrow cartway, and had near the ceiling of each ward ventilators, opening towards their airing ground. These Americans remained perfectly free from contagion; not one American died during the four months

in which the contagion prevailed so severely among the Spaniards."

Dr Blane, Dr Hunter, and Dr Wardell, as will appear by the Collection of Papers, all of whom have been physicians in the navy or army, and have superintended naval and military hospitals, likewise confirm the safety and advantage of fever-wards, even within Infirmaries.

The yellow fever of the West-Indies and North-America was brought forward by Mr Horn to the Special Court *(see Collection, p. 198)*, to prove the extensive range of contagion, and the impracticability of rules of prevention. "How many dreadful instances," says he, "of its ravages may be brought from the West-Indies and North-America; where the yellow fever has destroyed many thousands, and where contagion has been spread to a distance far beyond the limits of this Hospital, from effluvia arising from infected bodies, clothes, ships, &c. conveyed by the wind."—"Surely, when its ravages *(see Collection, p. 200)* were so much dreaded, that, in Philadelphia, *even parents forsook their children*, when they were seized with this distemper, *every known precaution* would be used: And can it possibly be supposed, that the disease could be diffused so very widely, under such circumstances, if *almost* actual contact was required for its production?"

Without insisting that scarcely *any* proper precaution could be taken, when parents deserted their children, during the terrific rage of the yellow fever, I shall endeavour to prove that its contagion, like that of all other fevers, was very limited,—and that, by proper regulations, its propagation might have been easily prevented.

From the concurrent testimony of all the writers upon this pestilence, it appears certain, that, when the sick, ill of the fever, were carried into the country, the disease never spread to the family where they lodged: And even in Philadelphia, where the dying and dead were deserted by their nearest relations, and, consequently, from this cause, contagion increased to the greatest degree of virulence, there is no reason to believe (nay, it is contrary to all facts established respecting contagion) that, in the open air, the disease could be communicated at a greater distance than a few feet from the source of the poison. Had it extended to the distance of twenty or thirty feet in the open air, it would, like a conflagration, have spread suddenly over the whole city, and even the country* in a very short time. But we find how limited the contagion was in the city of Philadelphia, from the following fact:—

"The jail of Philadelphia is under such excellent regulation, that the disorder made its appearance there only in two or three instances, although such abodes of misery are the places where contagious disorders are most commonly generated. When the yellow fever raged most violently in the city, there were in the jail 106 French soldiers and sailors, confined by order of the French Consul, besides 80 convicts, vagrants, and persons for trial; all of whom, except 2 or 3, remained perfectly free from the complaint. Several circumstances have conspired to produce this salutary effect. The people confined are frequently cleansed and purified by the use of the cold bath—they are kept con-

* This pestilence never visited any other town in America, than the sea-ports.

stantly employed—vegetables form a considerable part of their diet—in the yard, vegetation flourishes—and many of them being employed in stone-cutting, the water, constantly running, keeps the atmosphere in a moist state, while the people of Philadelphia have been uninterruptedly parched up by unceasing heat. Elijah Weed, the late jailor, caught the disorder in the city, in the performance of paternal duties towards his daughter, and died in the jail, without communicating it to any of the people confined."

Like other contagious fevers, the American pestilence was dreadfully destructive to the poor. Carey, an eye-witness, who distinguished himself for active benevolence, and personal assistance to the sick, observes, that "the inhabitants of dirty houses have severely expiated their neglect of cleanliness and decency, by the numbers of them that have fallen sacrifices: Whole families, in such houses, have sunk into one silent, undistinguishing grave. It is very probable, that at least seven-eighths of the number of the dead were of that class."—"The mortality in confined streets, small alleys, and close houses, debarred of free circulation of air, has exceeded, in great proportion, that in large streets and well-aired houses. In some of the alleys, a third or a fourth of the whole inhabitants are no more!"—By comparing this with the quotation in the preceding paragraph, it may be inferred, that the contagious miasms of the yellow fever of Philadelphia only contaminated the air to a very limited distance, —nay, that they did not render the air of a whole house, or even of a whole chamber, infectious.

The College of Physicians give the clearest evidence, that the disease was imported from the West-Indies: Therefore it is reasonable to conclude, that the great terror, misery, and devastation, committed by this pes-

tilence, might have been certainly prevented, by taking the first persons seized with it into any of the hospitals provided with fever-wards in Philadelphia, and by purifying the first-infected ship and house.

Warned by the fatal effects of neglecting purifications of infected ships and houses, on the appearance of the malignant fever of Philadelphia, the Americans have lately adopted proper rules for exterminating contagion on its first introduction.—In June and July, 1801, several ships returned to New-York, crowded with wretched emigrants from Ireland. A most virulent fever raged during the voyage, of which 30 and even 40 died in a single ship. The ships, the bedding, and the persons of the crews, are represented to have been in a state of filth and disease, too shocking to delicacy here to be related. Mr Bayley, the health officer, caused the clothes and bedding to be cleaned, or, if not worth cleaning, to be thrown into the bay: The sick were carried to the Marine Hospital on Staten-Island, and were distributed as widely from each other as circumstances would allow; and cleanliness and ventilation were carried to the utmost extent. The consequence of this management was, that, as soon as the regulations could be carried into effect, "*the poisonous effluvia issued from them no longer.*"—"It is worthy of being remembered, that emigrants from Ireland, landing immediately in the city, instead of being detained at the Marine Hospital, filled New-York with death and terror, in 1795."

The Medical Repository of New-York, from which the above account is extracted, contains another instance of pestilence, engendered in the ship Nancy, of 202 tons, from Sligo, crowded with 417 passengers. The vessel became sickly soon after sailing from Sligo;

a typhus fever and a dysentery became prevalent; and 90 persons died during the voyage. The state of this ship exhibited a still more shocking scene than the former. When she arrived at New-York, 180 were sick; and many had suffered from three or four relapses. About 40 were taken ill after their arrival. The sick were immediately stripped, washed, then wrapt up in clean blankets, and carried to the Marine Hospital; which not being capable of receiving so great a number, tents and other temporary accommodations were provided for the remainder. "*Separation, ventilation, and cleanliness, accomplished every thing that could be expected;* and only 26 died after their arrival at this port." After the power of ventilation and cleanliness in rendering innoxious the effluvia arising from so many patients under the most virulent infection, can any person, except under the influence of ill-founded fears, entertain a doubt of the complete safety of the fever-wards annexed to the Newcastle Infirmary.

In order to shew that the contagion of fever is not confined to so narrow limits as Dr Haygarth and others have proved, Mr Horn adduces instances from the West-Indies, where ships, by being moored to the *windward* of another ship where the master *believed there was a contagious disease*, and *by confining his people to their own ship*, never buried a man; "whilst in ships that did not use the same precautions, the mortality has been dreadful!" How does this prove that mooring to the windward was of any use, or that the range of contagion was extensive? *Was not confining the people to their own ship*, and allowing no sick person nor tainted clothes to be brought on board (which would be undoubtedly a restriction imposed by so cautious and so intelligent a man as Captain Renwick) *alone* sufficiently effectual means for preventing the introduction of contagion.

But Mr Horn proceeds—" The Winchester, Captain Bruce, carrying eighteen people, entered the harbour of *Port Morant* along with Mr Renwick, in high health,—and brought up to the leeward of the Henry, at about seventy fathoms distance. This last ship had been so severely afflicted with the yellow fever, as to bury ten out of her complement of twenty men. She lay exactly to the windward of Mr Bruce's ship, with her ports open, to allow a free current; and the effluvia *conveyed by these means* so affected the Winchester's crew, as to occasion the death of seven of them in seven days." A person must be very credulous, whilst there appear more likely means of the contagion having been received directly from the sick on shore by personal intercourse, who will allow this instance as a proof of contagion having been *blown* to the distance of seventy fathoms in the open air.

Mr Horn still proceeds farther—" Nearly the same thing occurred in the ship Orion, whose crew was perfectly healthy whilst she lay to the *windward* of the Duckinfield, where the sickness raged, until, by accident, getting entangled with that ship, and to the *leeward* only for a few minutes, until the ships were cleared of each other, the disease made its appearance, and carried off ten of the people." The near intercourse between the seamen of two entangled ships is so obvious, that this instance certainly is a proof of the limited sphere of contagion, if the disease was caught from the Duckinfield.

But if contagion could really have been introduced into these ships *in the manner* Mr Horn so confidently asserts, it has no application to the *fever-house* annexed to the Infirmary, where no contagion can subsist at a few feet from the patients; for, by completely wash-

ing them before they are admitted, contagion is either destroyed, or rendered inert; and by ventilation and cleanliness afterwards constantly observed, the effluvia arising from the bodies of the patients are so diluted as to become innocent.

The mooring of ships to the windward appears to be a most unnecessary and useless precaution towards the prevention of receiving contagion of *so limited a range* as that arising from the bodies of men, and of infected ships. The calms which inevitably take place, and the sea and land breezes, alter the relative situations of ships; and therefore such moorings can give no security. The practice of mooring to the windward, from having been found of the utmost service in the prevention of fevers, arising from marshy effluvia, seems to have been adopted without consideration; and such an error, as it may occasion quarrelling amongst masters of ships, ought not to be passed over without notice.

" Nothing," says the judicious Dr Currie, in a letter to the Editor, " seems to be more firmly established than the narrow sphere of even the most virulent contagions, where the air is allowed to circulate freely. Hence, in the torrid zone, where the heat of the atmosphere in a manner forces ventilation, the infectious quality of the most malignant fevers is a matter of dispute among the Faculty, though I believe with yourself and Dr Wright, (the present worthy President of the College of Physicians at Edinburgh) that, under a similar deficiency of ventilation, they would be equally or more infectious than the fevers of our northern latitude. Dangers that cannot be calculated, are always magnified by the imagination; and the baleful influence derived to the atmosphere, from taking

its constant course over extensive swamps of many thousand acres of putrifying animal and vegetable matter, has been loosely applied to the same air passing over a human body, for a thousandth part of the time, and a millionth part of the surface. Yet the testimony of all actual observers, in every region of the earth, is calculated to correct this error. Even the sphere of contagion of the plague, the most terrible of the diseases which affect the human species, seems limited to a very few feet, or even inches, in a free circulation of the air; and it might be received into your projected fever-ward with safety to the patients of the Infirmary, if we may believe the concurrent testimony of Savary, Bruce, Russel, and of Antes, the most recent and satisfactory of them all."

I shall continue the quotation from my correspondent a little farther, to shew that it does not, as Mr Horn would wish the Governors to believe, require medical abilities to judge of the propriety of the question before them.—"It is a folly to pretend that this subject is of a professional nature, and not cognizable by any fair understanding. The facts are numerous, —the inference easy. It is only necessary for unprejudiced men to make themselves masters of the first; the last, seems to me, inevitable. Even those who will not take the trouble of obtaining the information necessary to inform their own judgments, might regulate their conduct safely by conforming to the usual maxim on similar occasions,—that of adhering to the opinion of those who are likely to be best informed. That persons, the business of whose lives is to observe and to combat the effects of contagion, should be best acquainted with its laws, and their evidence best entitled to weight, in a question depending on those laws, are propositions that no one will dispute; and the force of which can only be eluded by shewing

that, on the point at issue, they have an interest likely to pervert their judgment or their evidence. But what peculiar interest have the faculty in institutions for the prevention of disease, unless, indeed, the honourable reputation they may derive from serving the community? What interest have members of the faculty, already in the possession of public confidence, in committing their reputation to hazard in the support of plans of a dangerous nature? If such plans succeed, their effects cannot be concealed; and if they turn out to be such as their opposers prophecy, they must destroy the reputation of their supporters."

It would much exceed the limits of this Preface to point out the great advantage which has accrued to medical science, and to the public, from the labours of gentlemen not of the profession. But it is known to the whole universe what COOKE effected in the navy towards the preservation of the health of seamen; and what HOWARD has accomplished in our prisons. A grand work of benevolence still remains for some future philanthropist, who, without fear, shall survey parish workhouses and private receptacles of afflicted indigence, and suggest to the Legislature an adequate remedy for preventing the propagation of contagion: like another HOWARD, his name will be consecrated in the admiration of posterity.

It will surely appear a little extraordinary to the intelligent reader, that none of the medical gentlemen in the opposition have attempted to bring facts from their own observation and experience, to prove the danger of annexing fever-wards to the Infirmary. This being impossible, they have only produced vague assertions, and partial extracts from one or two authors of reputation, knowing that it would be an easy

task to suggest weak fears, and excite groundless alarms.

" Let any unprejudiced person," says Mr Horn, " read the works of Dr Lind, of Haslar hospital, whose opportunities of tracing infection have been superior to those of most men, and he will find by *what unthought-of ways* it may be communicated: Where a few infected blankets have been clearly proved to have cut off a whole nation of Indians: Where, when, as Dr Lind says, A SMALL SPARK of contagion, once introduced into a fleet, and by the sick from that fleet to the town of Brest and its vicinity, more than 10,000 people, besides 5 physicians, 150 surgeons, and 200 almoners and nurses, fell victims to its rage, with many slaves, who, by a promise of their liberty, were engaged to assist the sick."

Dr Lind, in the above quotation, warns his reader of the *danger;* but Mr Horn should not have kept back the *security.* Dr Lind says, in the same book, that " the infection extends itself at no great distance;" that " the houses in the neighbourhood of an infected prison are in no danger of infection;" that " the body of the diseased, kept clean and neat, is not so liable to impress the taint, as his late wearing apparel, dirty linen, and uncleanliness of all sorts." The Doctor points out the means by which infection may be easily and effectually destroyed in any soft substance, ship, or house.—In short, let the very work be read from which Mr Horn takes the quotation, and it will be found that the late celebrated Dr Lind points out nearly the same methods of eradicating and preventing the spread of contagion, as have been proposed to be followed by a Board of Health, on opening the fever-house annexed to the Infirmary.

Dr Lind, moreover, in the work which Mr Horn quotes, shews the small danger in attending the sick, when cleanliness and ventilation are steadily enforced; he says, "that he never himself found the least symptom of infection, altho', for several years, he daily attended persons labouring under contagious diseases."—"That, in eighteen months, only FIVE persons died out of more than ONE HUNDRED *constantly employed as nurses;* of these one died through a decay of nature; one had been an irregular drunken man; one was not treated as directed; and the other two were victims to their own indiscretion, having concealed, under their beds, the clothes from persons violently infected."—"When the sick are collected, they should be arranged into two classes; the slightly infected, and those with constant fevers."—"It seldom happens in the jail distemper, that one third of the patients infected are so ill as to be totally confined to bed. By making this separation, the sphere of contagion will be greatly contracted, since I am inclined to believe, that patients, with a very slight* infection, when kept perfectly clean, and in well aired apartments, do not communicate disease."—*(Lind's Essay on the Health of Seamen, with Considerations on the Jail Distemper, p. 351.—See also interesting Letters from Dr Blane, Dr J. Hunter, and Dr Currie, in this Collection.)*

Sir George O. Paul, Bart. near twenty years ago, in a very interesting pamphlet†, from measures and ideas

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* Multiplied experience has clearly decided, since the edition of Dr Lind's book, 1774, that persons in the most malignant state of fevers, under such circumstances, never communicate contagion, except from contact, or a very near approach.

† See Thoughts on the alarming progress of the Jail Fever, with Rules for the Treatment of the diseased, and Means to be used to prevent its further Communication, 1784. This little tract was printed

respecting the prevention of contagion interspersed in this very work of Dr Lind, formed a few simple rules of proceeding, which may be easily practiſed either by an *individual family*, or by *the officers of any parish*, who may think proper to enter into a general undertaking. The jail fever, previous to this publication, had been often communicated to many parts of the county of Gloucester, by the return of debtors from prison; but since that period, and especially since the erection of the new jail, the distemper has been eradicated, and its generation prevented. It is much to be wished that this distinguished writer should be induced to republish his pamphlet, for the benefit of large towns, where contagious fevers constantly prevail. His arguments, so strongly and judiciously stated, could not fail to have weight with vestries, and with benevolent individuals, in promoting the formation of Boards of Health, and in annexing Fever-wards to every Hospital and Poor-house in the kingdom: By such a publication, country gentlemen might be enabled to secure themselves, and the parishes in which they reside, from the spread of contagion, when introduced from populous towns.

Mr Horn, in his hasty research into facts to present to the Governors of the Special Court, produces some instances from my own works, with the view, it is presumed, of shewing them that I had contradicted myself. —"Read the note at the foot of Dr Clark's circular letter, and see if his own quotation, from his own works, does not make strongly for this argument, and shew *he* thought, that contagion would spread to a greater distance than Dr Haygarth's limits." "My attention

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for the use of parish officers, and other inhabitants in the county of Gloucester. It only fell into the hands of the Editor a few weeks ago, being presented to him by the Author.

(says Dr Clark) was struck by the *humane and wise conduct* of the commander of the Salisbury: by anchoring his ship at a *little distance* from the rest of the fleet, and allowing *no intercourse with sickly ships*, he preserved his crew in health at Bengal, in the year 1768."—*(See Dr Clark's Letter, and also his Observations on Fever, p.* 391.)—"A further search into the Doctor's works will still more strongly confirm this; for in his Treatise on Diseases of Hot Climates, pages 151, 152, no less than ten instances are given, in which even a common ague, a disease not generally supposed contagious, was found highly so."

With respect to the instance of the Indiaman, no person who peruses my works, can believe that I was ever of the opinion of such extreme caution being necessary†; nay, if he will take the slightest glance of the chapter on the means of preventing and subduing infection, *(See Observations on Long Voyages, &c. p.* 537, *printed* 1792,) he will be convinced, that I thought nothing more required to secure these important ends, than removing the sick from those in health to the most airy part of the vessel, and injoining strict attention to cleanliness and ventilation.

The instances of agues being infectious, alluded to by Mr Horn in the above quotation, were given as curious and rare occurrences; but they are in no manner applicable to the support of his arguments. The contagion, in all the instances which I traced, was received either from contact, or from exposition to the vapour arising from the body in the hot stage; and in the Infirmary, the persons infected were in beds contiguous to the patient who communicated the distemper. The cake of ginger-bread, an instance afterwards adduced of the unlimited range of contagion, was daubed with variolous matter, wrapt up in paper, in

this state carried 17 miles, and infected a child by whom a piece of it was eaten, *(see Haygarth's Sketch, p. 419)*: The same consequence would have followed, had it been carried 17,000 miles.

Having, it is hoped, proved, in a satisfactory manner, that the facts brought forward by the opposition, when fully stated, are expressly in favour of the safety and importance of opening the fever-house annexed to the Infirmary, I shall dismiss this part of my subject with the following reflections:—I have considered it to be an incumbent duty to support my principles and practice against every attack; and more especially, when the overturn of such principles and practice is calculated to abridge the benevolent designs of a Charity I have so ardently endeavoured to improve. I lament exceedingly, that any difference in opinion should have arisen amongst the medical officers on a point where no room, I apprehended, could have been left for doubt; and I peculiarly regret, that the two surgeons in the opposition, with whom I have been in long habits of friendship, and who have in other professional matters of the utmost importance rested on my judgment, should have on this occasion withheld their confidence.

I should be deficient in gratitude, were I not to offer the warmest acknowledgments to my numerous correspondents, who have, in so obliging a manner, favoured me with important information,—to many of whom I am not personally known. To a few, whose names do not appear in this publication, the only apology I have to offer, is, that, although they expressed their fullest approbation of the measure, and ardent wishes for its completion, their letters did not contain facts stated from personal experience. From two phy-

sicians only I have not yet received answers to my inquiries; but, from publication, I can assert that both are warm friends for establishing fever-wards, not only annexed to hospitals, but *within* hospitals, when exclusively appropriated to that purpose.—Such coincidence of opinion and practice, and such unity of sentiment, scarcely ever before accompanied a correspondence on any medical question.

Should the fever-house be opened for general reception, it is contended, on the part of the opposition, that it will be in direct violation of the 15th rule; and, notwithstanding the judicious observations of a Governor *(see his letter, in the Collection, p. 124)*, I must beg leave to offer a few remarks on the subject.

The rule runs thus:—"That no woman big with child, no person labouring under insanity, the small-pox, or other infectious distemper, afflicted with cancer not admitting of operation, consumption, scrofula, or dropsy in the last stage, judged to be incurable, or in a dying condition, shall be admitted in-patients on any account."—This rule is taken from the London hospitals, where the patients recommended live in the vicinity; but such a rule must often be infringed, when applied to county infirmaries. When a patient is sent from a distance, and in so weak a state as to be unable to undergo a second journey, he must be admitted into the house, whatever be the nature or state of his complaint: Nay, even when a patient is able to return to his home, urged by the entreaty of the sufferer, and unwilling to offend a distant subscriber, who seldom makes use of his privilege of recommending, the receiving physician or surgeon cannot refuse admission. Hence the Infirmary is often crowded with patients, in the incurable states of many of these *forbidden* diseases; and any Governor, by taking a survey of the wards,

will observe, that the house almost always contains a number of incurable diseases, and also a number of patients capable of receiving equal relief out of the Infirmary, although the latter are kept in, in express violation of the 16th *rule*.

With respect to fevers, I have observed *(see Collection, p. 47)*, that they often are received into infirmaries, masked under the form of rheumatism and catarrh: Nay, I will go farther—Since I belonged to the Charity, I never rejected a patient because he laboured under evident symptoms of low fever: Other physicians, nay, I believe all of them, have done the same.

From the above circumstances, it is evident that this rule can be of no farther use than as an admonition to the physician, that he ought not to depart from it, except in urgent cases.

If the infringement of the 15th rule be attended with no possible disadvantage to the other patients, as has been proved, when an Infirmary has separate and distinct wards for the reception of fevers, and that such wards are capable of doing infinitely more good than all the other parts of the building, there can be nothing so *sacred* in this rule, but that it should be annulled as far as respects the admission of fever patients into wards set apart for that purpose.

It has been urged, that opening the fever-house for the resident poor will place the distant Governors on an unequal footing with those who live near the Infirmary. This, necessarily, must always be the case; for those who reside in the vicinity of an hospital, are most likely to be first called upon for letters of recommendation. But it is sufficiently obvious to every observer,

that the Governors who reside at a distance, would support the Charity from motives of humanity only; for they seldom recommend the number of patients they are entitled to. The admission of fevers into the house annexed to the Infirmary, and the prevention of contagion spreading into the country, is perhaps the only way in which distant Governors can receive advantage from the Infirmary.

If it were necessary, I could adduce many instances of contagion being carried into the country by patients or their clothes, but never by the air, to the distance of five, ten, and twenty, nay, to above one hundred miles from Newcastle: But after so much has been presented to the Governors on this subject, "the dignity of truth would be hurt by too much protesting."

To this Preface is prefixed an accurate sketch of the basement story of the Infirmary, its new wards and fever-house; from which the attentive observer cannot fail to be convinced, that the most scrupulous attention has been paid to prevent the least risk of contagion being communicated to the Infirmary; from which, indeed, it will be more effectually secured, than it was on the old establishment.

From the sketch it will appear, that, from No. 2, the common entrance to the old building, to No. 7, the door of the fever-house, the distance is 468 feet; whereas, from the old fever-room, T, to No. 8, the back door of the Infirmary, the distance is only 42 feet. —From the sketch it will also appear, that the out-grounds of the Infirmary and fever-house are intended to be separated by a wall, which will effectually prevent the possibility of intercourse with the old house; whereas the present fever-room, wretchedly calculated for the purpose, is in the yard of the Infirmary, where

patients are constantly passing its door.—The fever-house will have its own distinct nurses, who will not be allowed to enter the Infirmary on pain of dismission from service,—and it has also its own kitchen; whilst the present fever-room is attended by one of the nurses of the common wards, and the patient ill of fever receives his food and drink from the kitchen of the Infirmary *.

Soon after the decision of the Special Court, I turned my thoughts towards the propriety of proposing a Fever-house and Dispensary, to be erected in some airy situation; but the more I considered the subject, the more I was deterred from making the proposal †. If such an edifice were erected by subscription, it would, no doubt, be a public benefit; and I now sincerely wish that such a proposal had been made, before so much money had been unnecessarily expended.

But as such a project would now likely prove abortive, as it would not have the advantages of the one rejected; and more especially as the present fever-

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* With all these disadvantages, no instance has occurred, in the memory of the present officers of the Charity, of contagion having been communicated from the fever-room. Since this room has been occupied by the workmen engaged in the building, two patients have actually died of typhus in the common wards of the Infirmary, without communicating the disease to one single person.

† While we are speculating on the propriety of increasing the numbers of medical charities, when our present subsisting ones are in a state of decline, things are managed differently in other places. Convinced of the safety, and with a view to economy, at ETRURIA in Staffordshire, where the population is estimated to exceed 30,000 inhabitants, (created in a few years under the fostering auspices of the *Wedgewoods*, names which ever must be revered by this country) it is in contemplation, at the present moment, to erect a Dispensary, Fever-wards, and an Infirmary, connected by galleries, under the same roof.

house, in a little time, will be found useless to the Infirmary, and serve only to sink its declining funds, I am deterred from recommending it.

The Infirmary, without the fever-house, from various improved internal arrangements, besides dining-rooms for each sex, when finished, will have excellent accommodations for 108 patients. If *four* beds be kept *always in readiness* for the reception of medical cases of consequence, and *six* for surgical accidents, (accommodations necessary for every Infirmary, but which the old building never enjoyed) there will still remain room for 98 patients, independent of the fever-house, as will appear from a plan of the internal arrangement of the house, drawn by the architect.

The number of beds, by the Report of the Committee appointed the 5th of June, is limited to 84, exclusive of those in the fever-wards: Let it be supposed that 80 patients, upon an average, should be constantly in the house, and seven successions take place in one year, (the usual average in the old Infirmary) this will give 560 patients as the annual number admitted. But in the improved Infirmary, from more suitable accommodations, it is reasonable to believe that eight successions will take place in the course of the year, which will give 640 in-patients. From this calculation, it will appear, that when 10 beds are kept in readiness for the reception of medical and surgical cases, and that when 80, the limited number, are at one time in the house, there will then remain 18 beds, which will afford ample opportunities of changing the wards, and of answering every other useful purpose.

I cannot conclude without declaring, that ever since I belonged to the Infirmary, from defect and inatten-

tion to the statutes and rules, it has been in a complete state of disorganization. There has been no general co-operation, no regular system of management. The new statutes and rules appear to be well calculated to remedy these evils, and the acting weekly Committee, since the new arrangements, have laboured diligently to carry them into execution. The task, however, seems to be difficult, for notwithstanding the 21st statute enacts, that the number of patients admitted and discharged, and a return of the diseases of the in-patients, should be comprised in every annual Report, yet no such articles appear in that which was lately distributed at the anniversary meeting. The rules for professional conduct, agreed to by the Physicians and Surgeons, *(see New Code of Statutes, p 30)* confirm the importance and necessity of monthly and annual returns; and without them, indeed, it cannot be known how far any medical charity answers the benevolent design of its supporters.

These are not the complainings of a disappointed man, but of one ardent to raise the Infirmary to the highest pitch of excellence, not to limit its beneficence to the usual object it receives within its walls; but as far as possible to extend its usefulness to the public, and to increase its power towards the improvement of medical science.

Having been honoured in the career of his profession, with the confidence of the public to a degree far beyond his most sanguine expectations, he has every reason to be grateful and contented.

In his endeavours to improve the Infirmary, he with conscious pride declares he was influenced, in a very peculiar manner, by the motive of making the best

return in his power for the distinguished patronage with which he has been favoured. He never once conceived that the measure he proposed, which had received the seal of approbation and safety from long experience, could have occasioned so much alarm.—The fears of the really timid he respects; but will risk his reputation that such fears are ill founded; and he trusts, that the evidence he has adduced, will, upon perusal, implant conviction, and restore tranquillity.

PROCEEDINGS FOR PROMOTING

AN INSTITUTION

FOR THE

CURE AND PREVENTION

OF

CONTAGIOUS FEVERS

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NEWCASTLE:

PRINTED BY S. HODGSON, GROAT-MARKET.

1802.

ADVERTISEMENT.

THE following pages contain the deliberations of a Committee appointed November last, for increasing the usefulness of the Dispensary.

The Committee have ordered copies of this little tract to be addressed to the Mayor and Magistrates, to the Clergy, and to the Gentlemen composing the Vestries in Newcastle and Gateshead,—not doubting that the importance of the subject will gain an attentive perusal, and that in their official capacities, they will exert their influence towards the formation of an institution so indispensibly necessary for relieving the miseries of the poor, and securing all ranks from contagion.

The Committee also beg leave to submit their proceedings to the consideration of their fellow-citizens, sincerely hoping that they will, as on all former occasions, cheerfully give their support to an institution, which promises to be so peculiarly beneficial to the lower orders of the community.

NEWCASTLE, APRIL 14, 1802.

LIST OF THE COMMITTEE.

Rev. Dr Prosser
William Hargrave, Esq.
Isaac Cookson, Esq.
Mr Lloyd
Mr Lawton
Mr J. Anderson
Mr Leighton
Nathaniel Clayton, Esq.
T. E. Headlam, Esq.
Ralph Atkinson, Esq.
Mr J. Langlands
Mr Harvey
Dr Clark
Mr John Atkinson
Mr Ormston
Mr Barras
Mr Doubleday.

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MONTHLY COMMITTEE,

Dispensary, January 27th, 1802.

IT appearing to this Committee, from the records of the Dispensary, that infectious fevers have constantly existed in some of the habitations of the poor, in Newcastle and Gateshead; that, in particular districts, they have often contracted a high degree of malignity; that they have been particularly prevalent during the whole of last year; that an infectious fever still subsists in many of the habitations of the poor, visited by the medical officers; and that the funds of this charity are perfectly inadequate to carry into execution effectual measures for eradicating the contagion,

RESOLVED,

THAT this Committee inquire into the causes which produce, preserve, and propagate the contagion of fever, in Newcastle and Gateshead; that they digest a plan to eradicate the contagion, and to prevent, as far as possible, its generation and progress in future; and that they point out the most likely means of raising a fund to carry the plan into execution.

I. AN INQUIRY INTO THE CAUSES WHICH PRODUCE, PRESERVE, AND PROPAGATE INFECTIOUS FEVERS, IN NEWCASTLE AND GATESHEAD.

THE habitations of the poor, where fevers prevail, are low, dirty, and ill aired, being chiefly situated in narrow lanes and courts; such as those of *Pandon*, on the *Quay*, in the *Castle-Garth*, *Long-stairs*, *Sandgate*, and *Pipewell-gate*. In some of the miserable dwellings, in these places, fevers have never been known to have been absent, since the commencement of the Dispensary.

One poor family, in these places, seldom occupies more than one room; and the number in one family, upon an average, may be estimated at *five*. Their apartments, in general, have seldom more than one window each, the sash of which is either entirely fixed, or is so constructed, as only to open at a small part. One bedstead, a chair, and a stool, are not unfrequently the whole stock of furniture. The bed-clothes are, in general, scanty, tattered, and dirty; and it is a rare thing to observe any change of bed-linen. Amongst the most indigent, the bed-clothes are never scoured, or the sheets washed; and an equal inattention to cleanliness is observed in their body linen; their rooms are seldom, if ever, white-washed; the floors are dirty; and the stairs and passages to them are filthy, dark, and unventilated; the windows being, for the most part, blocked up.

In such wretched habitations, a fever is frequently generated: but whether it be generated, or introduced into a fami-

ly, the contagion spreads over the whole house.—— Many weeks, however, elapse before the infection has gone through a family; and still a great many more, before it has proceeded through a house containing several families: and, if cleanliness and ventilation be neglected, and the patients be without a change of linen, they are subject to frequent relapses. Language fails to represent the complicated sufferings of a family, in the above situation. The scanty pittance allowed by an overseer, generally comes too late. The physician and surgeon who attend, often witness misery, which they cannot alleviate. The father not unfrequently dies, and his orphans become a burden upon the parish. But the mischief does not end here; the contagion spreads to other families in the same house and neighbourhood, whose humanity has impelled them to become visitors during the sickness. Nay, the clothes of those who were sick, and the walls of the room, if they have not been white-washed, contain for a very long time the seeds of contagion, and are capable of communicating infection. Instances have occurred to the physicians and visiting surgeon, where contagion has been preserved in one room for two years, and which infected every new family that came into it.

Although the Committee would wish to forbear wounding the feelings of the humane, yet the cause they have undertaken to plead, obliges them to present the following instance* of the misery occasioned by the contagion of fever; the pro-

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* More instances of the misery occasioned by the progress of contagious fevers amongst the poor, will appear in the Appendix, No. I.

gress of which might have been easily prevented by the immediate removal of the first patient taken ill; and by proper methods of purifying the habitation.

"In a small house," says Mr Murray the visiting surgeon of the Dispensary, "at the Head of Millar's Entry, in *Pipewell-gate*, inhabited by four families, amounting in all to eleven persons, a fever broke out in the end of October, 1801. It began in a dirty small room on the ground floor, which had only one fixed window. The first person taken ill was a boy nine years old, who died on the 4th day of his disease; notwithstanding every exertion, the house being incapable of ventilation, and destitute of the necessary articles to secure cleanliness, the fever gradually attacked every family in the building, and no person escaped, except an old woman. It afterwards spread amongst several families in the neighbourhood, some of whom died,—but those who were admitted to the benefit of the Dispensary, had the disease in a milder form, and fortunately every person recovered from it, except the boy already mentioned."

The Committee must observe before they leave this painful part of the subject, that there are LODGING HOUSES in the *Long-stairs*, in *Sandgate*, *Pandon*, *Pipewell-gate*, and in the *High-street* in *Gateshead*, in some of which there are often at one time, from twelve to fourteen lodgers, two and sometimes three persons occupying the same bed. When a fever is produced in such houses, or when it is introduced, it rarely happens that any of the inhabitants escape the infection: And if a lodger die, or remove, he is succeeded by another who is put into the same bed, without any previous purification. It will be needless to mention the consequences, and to observe, that those lodging houses more powerfully

preserve and spread contagion, than perhaps the aggregate of all the other habitations of the poor. *It were much to be wished that the renters of these* LODGING HOUSES *were obliged to take out a license, and frequently to purify them under the eye of an inspector.*

Having given a description of the places in which the contagion of fever is generated and preserved, it will not be improper to point out by what means it is introduced into the habitations of the industrious labourer or mechanic, who inhabit more comfortable apartments; and also frequently into the families of the middle, and even sometimes into the houses of the higher, orders of society.

In the neighbourhood, where a fever subsists, some person belonging perhaps to the family of a labourer or mechanic, from motives of humanity visits and assists the sick. In consequence of this infection is caught. The husband, after the disease is introduced, is often infected from attending his wife; and if the family have but one apartment, few escape the contagion. Poverty now presses hard on such a family; and if they have any stock of clothes or linen, they are gradually sold or pawned for their immediate support; and the unfortunate family, though in comfortable circumstances previous to the attack of this calamity, is soon reduced to a level with those originally in great indigence.

But the evil does not terminate here; the clothes and linen sold or pawned, especially of those who die, are impregnated with contagion, as well as the room; and servants who visit their friends or acquaintances during the fever, and more particularly those who buy articles of linen or apparel from pawnbrokers, introduce the infection, without suspicion, into

the families of the affluent. Such unsuspected modes of introducing contagion can seldom be traced; but that they frequently operate powerfully cannot be doubted. A physician to the Dispensary avers, that the most malignant cases of fever he ever attended in Newcastle, were in the families of three pawnbrokers; and that he has frequently seen well-dressed children, in the rooms of poor patients labouring under infectious diseases; being carried thither by their maids when visiting their sick relations.

Those who attend in retail shops, and the servants in public-houses, often receive the contagion from the indigent poor, who go to purchase articles as soon as they are able to crawl abroad, in the clothes they have worn during the distemper; and this will easily account for the frequency of fevers, and other contagious diseases, amongst a class of inhabitants who would not otherwise be liable to them.

When the fever is introduced into families of higher rank, the mortality occasioned by the disease is more than double. Amongst the poor, the fever is simple, and strictly of the low kind, and yields readily to medicine; but among those of better rank, it is of a complicated nature, and not so easily cured.

Although the Dispensary has been successful in curing fevers,* and by the circulation of preventive rules, has kept it within narrow limits; yet, it is certain, that with its present income, it cannot eradicate contagion, nor prevent its progress. Before the Committee proceed to offer a plan to ef-

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* It appears from the annual returns that *one* in *fifteen* only has died of fever, since the commencement of the Dispensary.

fectuate those important purposes, it may not be improper to state a few leading established facts respecting contagion, in order to evince the practicability and efficacy of the means of prevention which are to be proposed.

II. LEADING FACTS RESPECTING CONTAGION.

1. CONTAGIOUS diseases have been divided into two classes: Those of the first are termed *specific* contagions, and attack persons only once during life; such as the small pox, the measles, and scarlet fever. These diseases, are not generated by any process of nature with which we are acquainted; but are always propagated by a *previous subsisting* contagion. If, therefore, they were expelled from a kingdom, and their introduction prevented, they would not be again produced.

Those of the second class are termed *general* contagions, and seize persons oftener than once; such as the fevers variously termed *low*, *nervous*, *putrid*, *malignant*, *jail*, *hospital*, &c. and which, in various degrees of malignity, prevail in the habitations of the poor. These require no *subsisting* contagion for their propagation; because the infection is generated where a number of persons are lodged together, in a close, dirty, damp, and ill-ventilated place; and its influence is increased by anxiety, sorrow, and want of proper diet. These contagions, therefore, though extinguished, will be easily again generated, if the ill effects of crowding, sloth, and inattention to cleanliness, be not obviated among the lower orders of society.

2. Although fevers are occasionally generated in the above manner, yet they are much more frequently caught by infection; and it has been ascertained, that cleanliness, ventilation, and the separation of the sick from those that are well, are certain preventives both against the generation and diffusion of contagion.

3. The most malignant fever, does not render the atmosphere infectious farther than a few feet from the patient, or from the contagion preserved in clothes, furniture, &c.: and daily observation confirms, that a person must remain a considerable time within the sphere of infection, to receive it: for physicians and surgeons, who avoid the current of the patient's breath, and the effluvia arising from his body, within the bed-curtains, do not receive the contagion in their ordinary visits; and that they never convey it to others, the infectious effluvia received in their apparel, being speedily rendered innoxious by being diluted with pure air.

4. In houses with spacious apartments, the family, and even the nurses of patients ill of a contagious fever, may, in the same house, be preserved from infection, by separation, ventilation, and cleanliness. But when an infectious fever appears in a family who inhabit a single room, or a small house, without the means of cleanliness, its members cannot be preserved from the contagion, unless the patients be removed into a *separate* building, and their apartments purified, by white-washing the walls, and also by washing and scouring the clothes and furniture.

III. OUTLINES OF A PLAN FOR THE CURE AND PREVENTION OF CONTAGIOUS FEVERS IN NEWCASTLE AND GATESHEAD.

1. THAT a BOARD of HEALTH be instituted, consisting of members,* including the physicians and surgeons of the Dispensary; and that a general meeting of this board be held twice every year.

2. THAT the Board of Health circulate a paper of instructions (as has been hitherto done by the Governors of the Dispensary, see Appendix, No. III.) amongst the poor, to guard them against the formation and progress of fever, and other infectious diseases.

3. THAT a HOUSE of RECOVERY be provided for the reception of those persons labouring under fever, whom it may be judged necessary to remove, either on account of extreme poverty, the malignity of the disease, or the crowded state of their habitations.

4. THAT a Committee be chosen annually, consisting of twelve members; and the physicians and surgeons of the Dispensary (who are to be considered as constant members of the committee)—and that they meet at the Dispensary, every

* Several of the members of the Board of Health are proposed to be appointed by parish vestries of Newcastle and Gateshead, for reasons which will appear afterwards.

Monday during the prevalence of contagious fevers; and at other times once in the month, to conduct the business of the institution.

5. THAT the physicians of the Dispensary attend the Patients; and that the medicines be dispensed from that charity.

6. THAT regulations for the internal management of the House of Recovery, be prepared by the Committee, assisted by the medical officers.

7. THAT a stock of bed-clothes and apparel be provided, to consist of such articles as the Committee shall direct; from which the objects of this charity shall be provided, by way of *loan*, or *gift*, when judged necessary.*

8. THAT a sedan chair, with a moveable linen lining, be kept at the House of Recovery, to convey the patients, at the expense of the institution.

9. THAT when the physicians of the Dispensary find it necessary to remove a patient labouring under a contagious fever, from his own habitation, they shall be empowered to give an order for the admission of the patient into the House of Recovery; and for the purification of his habita-

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* The dress allowed by the Board of Health at Manchester, consists of a flannel jacket and trowsers, for the men,—and a wrapping gown and petticoat for the women during their convalescence. Their own clothes are washed, scoured, and ventilated, and given to them to return home in, upon their discharge from the House of Recovery.

tion; and when they do not find it necessary to remove patients, they shall give an order for such articles of clothing as are necessary; and when the fever is over, the apartments shall be cleansed, and washed with hot quick lime; and the infected bed-clothes shall be purified or destroyed when judged necessary by the physicians, by an order of the Committee, at the expense of this institution.

10. AN inspector shall be appointed by the Committee, with a moderate salary. He shall be intrusted with the care of the clothes and apparel, belonging to the institution. He shall, at every meeting, lay before the Committee an account of the articles of clothing in his possession; and a list of those lent or given by order of the Committee; and of those returned since their preceding meeting. He shall, from time to time, visit the apartments of those patients whom it shall be found necessary to intrust with clothes and apparel; and report to the Committee, when they are not applied to the intended purpose. He shall superintend the execution of the measures for purifying the clothes and apartments; but he shall not deliver out of his custody any article of clothing or apparel, without an order from the Committee, or the medical visitor.

IV. OF THE MOST PROPER MEANS FOR ESTABLISHING A FUND FOR CARRYING THE OBJECTS OF THE PROPOSED INSTITUTION INTO EFFECT.

TWO methods naturally present themselves for effecting this important purpose, viz. the charitable contributions of individuals,—and assistance from parochial rates.

The first having been hitherto generally adopted in medical charities, gained the attention of the Governors of the Dispensary in 1793, when a proposal was made by Dr Ramsay for erecting a FEVER HOSPITAL, and by Dr Clark for the establishment of a SOCIETY of HEALTH for preventing the generation and spreading of contagious fevers, [see Appendix, No. I. and II.].

The Governors of the Dispensary, judging it impossible at that time to raise a fund adequate to the purpose, after a few meetings, suspended their proceedings.

The present Committee can devise no method so proper or effectual for establishing a fund, as parochial aid; and they are convinced, from the following considerations, that it would be the interest of the parishes to carry the designs of the proposed institution into effect.

1st. The sick, who would become patients of the HOUSE of RECOVERY, as well as those whose extreme indigence would require aid of the BOARD of HEALTH, at their own places of abode, are at present supported by parochial rates; it will, therefore, impose no additional burden on the

parishes, but, in the end, probably lessen the expense, and add much to the comforts of the poor, if the money collected be distributed by the Board of Health, of which the overseers will invariably constitute a part.

2d. The money given by the parishes at present, though considerable, is attended with little comparative advantage; because, in many instances, without removing the patient to a House of Recovery and purifying the habitations, the furniture, and clothes of the infected, after the fever is over, the progress of contagion cannot be prevented.

3d. The sickness of the father or mother of a family, occupies the time and attention of the rest; when the mother becomes sick, the care of the family devolving on the father obliges him to leave his work to attend her in her illness, and, in a short time they all become a burden to the parish. But when the first person taken ill of a fever is removed, the spread of contagion is prevented; and the rest of the family are enabled to follow their employments, and to earn a subsistence.

4th. By preventing the progress of contagion, there would be fewer sick, a less number on the poor rolls, and fewer widows and orphans left upon the parish: And the public money would, certainly, be better bestowed in preserving the parent, than in rearing his offspring, who, deprived of parental tuition, too often become useless or dangerous members of society.

5th. Fevers spread by contagion, from the poor to the higher ranks of the inhabitants; therefore the motive of self-preservation is added to humanity in favour of an insti-

tution for exterminating such dangerous distempers; and surely a fund for so important a purpose cannot be more equally raised than from the parochial rates; and no measure seems so well calculated to prevent the increase of these rates.

The establishment of a HOUSE FOR THE RECEPTION OF THE POOR, when afflicted with contagious fever, at the expense of the parish, is not without precedent. The inhabitants of *Liverpool*, distinguished for liberality and charity, having experienced the success of *two large fever wards*, (fitted up in the centre of an immense workhouse, often containing 1200 persons) in preventing contagion, agreed at an annual vestry meeting in *March*, 1796, to construct a set of fever wards for the general reception of the poor. It was asserted that this would be a plan not merely of charity, but of economy.* Some difference arising amongst the Committee, concerning the execution of the plan, the business was retarded. But in the summer of 1801, it was finally agreed to erect a *Large Fever Hospital*, to be called the HOUSE of RECOVERY, in imitation of *Manchester*. The expense of the building and out-grounds is estimated to exceed six thousand guineas, and its annual maintenance three thousand pounds.† This great work of benevolence and

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* Dr Currie on the population of Liverpool, and the prevalence of fever among the poor, Chap. xvi. *of Medical Reports.*

† "From the registers kept at the Liverpool Dispensary, it appears that, upon an average, above 3,000 patients are admitted *annually*, labouring under contagious fever." This is a most astonishing number in a town, where the population at that period (1796), did not exceed 63,000. But it must be observed that above 7000 live in cellars under ground, and 9000 in back-houses, which have an imperfect ventilation;

mercy is now executing at the expense of the parish, (Liverpool consisting of one parish) and will be speedily opened for the reception of the sick; and supported out of the poor rates.

The advantages which would arise from the Institution proposed by the Committee, do not rest on the uncertain basis of theory, but are established on the immoveable foundation of facts and experience; as will appear from the following account of an association formed at *Bury* in the county of Lancaster, for the suppression of a CONTAGIOUS FEVER, by the Rev. Sir Wm Clerke, Bart. Rector, assisted by Dr Percival. The plan adopted was in imitation of that at Chester established by Dr Haygarth, to prevent the propagation of the Small Pox. The association, by subscription, aided by a parochial rate, provided the most indigent families with bedsteads, blankets, and linen,—and also wine and cordial support. Rules for the prevention and suppression of the fever were selected by Dr Percival, and carried into

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and that, in the cellars and in the back-houses, the contagious fever is constantly present. The prevalence of contagious fever will also account for the enormous poor rates, which, in that town, amounted last year to 28,000l.

In the most sickly years, not more than 425 labouring under fever, have been admitted at the Dispensary in Newcastle; therefore, the annual expense of a *House* of *Recovery* may be estimated only to cost about 400l. or a seventh of the Institution at Liverpool. So moderate a fund was found adequate to support the Manchester *House* of *Recovery*, for the first year of the Institution. The fitting up the House cost 200l. The annual expenditure, including House rent, amounted nearly to 400l. Dr Ferriar's *Medical Histories*, vol. 3.

execution by a Committee, of which the benevolent clergyman was chairman.

Before the plan was adopted, of *sixteen* burials in one week, the latter end of November, *twelve* were persons who died of the fever.—On the 21st of December, a general medical attendance was given, and the plan of prevention commenced.—At that time, *sixty-three* persons were ill of the fever.—On the 28th of December, *thirty-one* more required attendance; and after that *twenty-one* more were taken ill.—After the adoption of the plan, only *four* persons died of the fever, in a space of time sufficient for all the persons infected to have gone through every stage of the disease.

The Institution at Manchester still shews the advantages which have arisen from a plan similar to that proposed by the Committee, upon a larger scale, in a town of great population, where contagious fevers are peculiarly prevalent.—The HOUSE of RECOVERY was established in *May*, 1796.—The following extract is taken from the REPORT of the BOARD of HEALTH, of fever cases admitted to the benefit of the Dispensary.

' From Sept. 20, 1793, to May 20, 1794, 8 months		400
Sept. 20, 1794,	1795,	389
Sept. 20, 1795,	1796,	267
		1056
" From July 13, 1796, (less than two months from the opening of the *House* of *Recovery*) to March 13, 1797, being 8 months		25

" The bills of mortality for 1796, shew that there has been a decrease in the burials, amounting nearly to 400."

"In 1797, the expense of pauper coffins was diminished one-third."

Measures, for forming an Institution in the metropolis, similar to that adopted at Manchester, were taken into consideration on the 1st May, 1801. The meeting was attended by the Duke of Somerset, the Earl of Pomfret, the Bishop of London, and the Bishop of Durham (who, by desire, took the chair), together with many respectable inhabitants of the metropolis. The following resolutions were unanimously adopted.—"That it appears to this meeting, by a certificate from the physicians of the Hospitals and Dispensaries in London, that the contagious malignant fever has been for some time past, and now is, prevalent in the metropolis; and that it has been occasioned by individual infection, which, with proper care, might have been immediately checked; or has been produced or renewed by the dwellings of the poor not having been properly cleansed and purified from contagion, after the fever has been prevalent in them: That it also appears that this evil (the injury and danger of which extend to every part of the metropolis) might be prevented by cleansing and purifying the clothes, furniture, and apartments, of persons attacked by this disease, and by removing them from situations where, if they remain, the infection of others is inevitable; and that a subscription be immediately set on foot, for the purpose of forming an Institution for checking the progress of the contagious malignant fever in the metropolis, and for removing the causes of infection from the dwellings of the poor."

This Institution was soon afterwards established under the following patronage;—PRESIDENT, his Grace the Duke of Somerset.—VICE-PRESIDENTS, the Lord Bishop of Dur-

ham, Lord Sheffield, Sir Walter Farquhar, Bart. William Wilberforce, Esq. Langford Millington, Esq.

The Committee cannot prevail upon themselves to conclude, without presenting the following extract from the last annual report of the Dispensary.

"From the statement of accounts, it will appear, that the expenditure has, this year, exceeded the income above 193l. The exigency of the times has not only reduced the subscriptions, but occasioned more sickness, and a very great advance in the price of medicines. Hence above *five hundred* patients have been admitted more than in almost any former years,* and the expense of medicines has exceeded that of any other above 100l."

"This depression of the finances, it is to be hoped, will not only impress the contributors to this charity, but also all benevolent persons, in affluent circumstances, of the necessity of maintaining the annual subscriptions and benefactions in such a state, as to answer the affecting calls of sickness, aggravated by poverty."

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* The number of fevers, which are the most expensive cases, amounted, by the annual return of 1801, to 425. For the present year, although seven months have only elapsed, (April 1st) the number of fever cases admitted to the Dispensary are upwards of *three hundred*.

APPENDIX.

No. I.

OBSERVATIONS ON THE SPREADING OF CONTAGIOUS FEVERS IN NEWCASTLE, WITH A PLAN FOR CHECKING ITS PROGRESS.—BY DR RAMSAY.—OCT. 1793.

DR RAMSAY remarks, that when the patients of the Dispensary are so fortunate as to have more than one apartment and a change of linen, the malignity of fever has been corrected, and its ravages checked, by medical treatment, and the due observance of the rules of prevention, distributed by the Governors of the charity. On the other hand, from their crowded habitations, want of necessaries, and proper attention to ventilation, the disease acquires increased virulence, and spreads rapidly its contagion.

In confirmation of this, Dr Ramsay states the following facts, which came under his own observation. In March, 1793, a fever with alarming symptoms, was brought from the jail among the inhabitants of a narrow entry near the *White Cross*.—It spread as follows:

In a family (occupying a small room and a closet), SEVEN persons were infected.

In another house, the family occupying *two* rooms, THREE were infected.

In a third house, the family occupying *two* rooms, ONE person was infected.

And in a fourth house, the family occupying *two* rooms, TWO were infected.

Nearly about the same time, a fever appeared in an entry in the *Side*; and spread as follows:

In a family, occupying *one* room, THREE persons were infected; from hence it was carried to *Gateshead*.

In another house, the family occupying *one* room, ONE was infected; the disease was carried by this patient to the *Wall Knoll*.

In another house, the family occupying *two* rooms, one of which was under ground, SEVEN persons were infected.

In a fourth house, the family occupying *one* room, TWO were infected.

In a lane, *Quayside*, during April, 1793, a similar fever appeared.

In a house, the family occupying *one* room, SEVEN persons were infected; the disease from this house was carried to *Sandgate*.

In a second family, occupying *one* room, ONE person was infected.

In a third family, occupying *one* room, ONE person was infected.

In the *Castle-Garth*, about the same period, this fever appeared as follows:

In a house, the family occupying *one* room containing two beds, SIX persons were infected.

In the same house, another family occupying a different room, THREE were infected.

In another family, occupying a third room in the same house, FIVE were infected.

And in a fourth room, in the same house, ONE was infected.

To remedy these evils, Dr Ramsay proposes that a plain building, capable of containing 20 or 30 patients, be erected by subscription, and supported by annual contributions, assisted by a parochial rate.

Among the many great advantages arising from such an Institution, Dr Ramsay enumerates the following :—That the comforts of personal cleanliness, air, and ventilation would be secured to the patients by their removal to this asylum, as well as the more regular administration of medicines and support; and that the separation of the persons first affected, would be the most effectual method of preventing the contagion from spreading in the family and neighbourhood.

The Doctor concludes his observations, from calculations he has made, that it would be economy in the parishes to adopt such an institution; and that, with regard to the public, it ought to be considered as a kind of insurance of life, rather than an affair of charity; as an association against those calamities which all may be sharers of.

"*Æque pauperibus prodest locupletibus Æque.*"

APPENDIX.

No. II.

REMARKS ON THE MEANS OF PREVENTING THE GENERATION AND PROPAGATION OF CONTAGIOUS FEVERS IN NEWCASTLE.—BY DR CLARK.—NOV. 6, 1793.—PRINTED VERBATIM FROM THE ORIGINAL M.S.

SECTION I.

THE experience of eighteen years, both in the Dispensary and in private practice, confirms the author of the following remarks in the opinion that few towns of an equal size are less frequently visited with epidemical distempers: and except the influenza in the year 1775 and 1782 (which occasioned little mortality); the scarlet fever with sore throat in 1777 and 1778; the dysentery in 1783 and 1785; and the small pox at various times, no distempers have been so prevalent as to entitle them to be ranked amongst epidemics.

During the period already mentioned, the continued fever has constantly prevailed; and annually in the houses of some poor patients has been attended with a high degree of malignity, and consequently has spread in some districts of the town. A fever of this nature broke out in the narrow lanes on the *Quay* and *Pandon*, and was frequent in the latter end

of 1777 and beginning of 1778. And a similar fever was generated in the *Poor House of Gateshead*, in 1790, from whence it was carried into the narrow ill-aired lane, *Pipewellgate*, where it committed considerable havock amongst the poor. In September, it made its appearance in Newcastle, and, in several instances, was communicated to genteel families. This last fever, in which the infection was more virulent, and fatal to a few of the inhabitants of better rank, was easily subdued amongst the poor; and never spread to any alarming degree, *when proper rules of prevention* were early carried into execution, either in private practice or among the Dispensary patients; and it is to be remarked, that fewer died amongst the latter than amongst the former, with respect to the numbers that were taken ill.

But although the mortality occasioned by fevers in this town has not been great for the last eighteen years, and the inhabitants of the first rank have been almost totally exempted from them, yet, in several families of the poor, the disease has been attended with great malignity, and from its infectious nature, it has been communicated by intercourse; which circumstances evince the necessity of carrying rules of prevention into as strict execution as possible.

Besides the infection of the continued fever, another contagion of a specific nature, which though less rarely prevalent, has occasioned much more proportional mortality. This is the scarlet fever, attended with ulcerated sore throat. It was prevalent in the year 1777 and 1778. It occasioned great mortality amongst the poor, and also in some families in affluent circumstances.

This disease has never been totally absent from the towns and villages in the neighbourhood; and instances of it have

appeared with malignity in Newcastle, at various times since the above period. It has very lately again made its appearance in this town, and in three instances has been so suddenly fatal, as to occasion much public alarm.

The contagion of this fever, when virulent, is much more to be dreaded than that of proper fever, because it is more readily disseminated. In the genteel families in which it has recently appeared, by proper measures, the spread of contagion has been prevented; and, as yet, it has scarcely made its appearance amongst the poor.

The circumstances above mentioned point out the necessity of adopting more effectual measures to prevent the generation and spreading of contagion; but before entering upon the subject, it may not be improper to state some plain facts on which the means of prevention depend.

SECTION 2.

FACTS RESPECTING CONTAGION.

By contagion is meant poisonous effluvia or matter arising from the bodies of persons under certain distempers, which communicate the same disease to others who come near to them, or near to substances imbued with matter, with sweat and other excretions of the deceased. And it has been observed, that substances so imbued, impart a more virulent and concentrated contagion, than that arising from the effluvia of the sick.

It is ascertained that the atmosphere, at a very limited distance from the sources of contagion, never becomes infectious; and that even infectious effluvia, whether issuing from the body of a patient, or from substances imbued with matter, or morbid excretions, are, by dilution with the common air, rendered inert. This important fact has been ascertained in the plague by Dr M'Kenzie, Rev. Mr Dawes, Dr Russell, and Mr Howard; and Dr Haygarth has incontestably proved, that by dilution with the air, the contagious effluvia of the small pox become innoxious at less than three feet distance from a patient loaded with pustules.

When many persons are crowded together, labouring under infectious diseases, and a total disregard to cleanliness and ventilation has taken place, not only linen and clothes receive the taint, but even the furniture and the apartments themselves become contaminated. Numerous instances of this happen in jails, hospitals, and poor houses, and in the habitations of the indigent.

Some contagions are of a specific nature, and can only be propagated by their own particular infection. Of this kind are the small pox, the measles, the scarlet fever, the plague, and the hooping cough. Of all these diseases, the plague only seizes a person more than once in his life. If the former diseases be expelled from a kingdom, proper regulations will prevent their being again introduced, for they cannot be propagated but by their own respective poisons.

But the contagion of fever is of a quite different nature; as it arises spontaneously from a concurrence of various circumstances. When a person is taken ill of any feverish complaint, suppose a simple remittent or cold, and neglects

cleanliness, is despondent, and has no supplies of fresh air, a virulent degree of infection is often produced. If confined to the murky air of a jail, hospital, or ship, the most malignant fever will be produced; and if to a crowded apartment, as happens in families of the poor, a contagious fever will be generated, only differing from the jail, hospital, or ship fever in degree.

The experience of more than a century has confirmed, that by a judicious police, the importation of the plague has been prevented; and a society at Chester, under the direction of Dr Haygarth, by proper regulations, prevented the spreading of the small pox in that city.

The contagion of fever is of a much less virulent nature than the peculiar contagion of the above diseases, and is easily prevented by ventilation and cleanliness, as experience daily evinces. And that the spread of contagious fevers amongst the poor may be checked by rules of prevention, appears from the proceedings of a society established at Bury, in the county of Lancaster, in 1789, by the Rev. Sir Wm Clerke, Bart. assisted by Dr Percival of Manchester.

SECTION 3.

PLAN FOR PREVENTING THE GENERATION AND SPREADING OF CONTAGIOUS FEVERS IN NEWCASTLE.

THE remarks offered in the preceding sections, point out the necessity and the practicability of preserving the poor from the fatal consequences of contagion. But this important end, it is apprehended, can neither be fully effected by

the Dispensary, nor by parochial charity; although both will lessen the expenses of any other society that may be established. The Dispensary will afford medical aid, and the parish officers may give some supply from the poor rates.

In order to prevent the generation and spreading of contagion, it will be necessary to establish A SOCIETY FOR PRESERVING THE HEALTH OF THE POOR; whose particular province it should be to circulate an address to the inhabitants, recommending cautions to be observed for the preserving health,—and rules for preventing the generation and progress of contagion.

This society should, in cases of extreme indigence, not only afford some cordial support, but also, when necessary, linen and bed clothes, &c.; and in cases of great poverty, the patient should have new clothes before he be suffered to go abroad.

The society should also appoint an inspector (who should be of the medical profession), to whom a moderate salary should be allowed; whose business should be to see the rules of prevention carried into execution, and also to make an early discovery of any poor person who may labour under a contagious fever, small pox, the scarlet fever, &c.; and he should be authorised to give a moderate reward to any person who may bring certain intelligence when any of these diseases have appeared in a poor family.

When a fever shows much malignity, or the patients are crowded in dirty and ill-aired habitations, they should be removed, if possible, to others.—A small House of Reception may be hired at first by the society, and fitted properly up for this purpose, in a well-aired situation.

For the relief of a very useful part of society who often have no home to go to when seized with an infectious fever, viz. servants in the families of the middle class of the inhabitants, a LODGING HOUSE may be hired in an airy situation. This, it is apprehended, will be no great expense, as many masters and mistresses will be glad to pay a moderate consideration for the subsistence and cure of their servants, rather than keep them at home, or unfeelingly abandon them in the hour of sickness.

Such an institution as the above, appears to be the one best calculated to strike at the root of the evil. The expense in carrying it into execution will be trifling; the miseries of the poor will be alleviated; a great many lives preserved; and the inhabitants of higher rank will be secured from the dangerous influence of contagion.

APPENDIX.

No. III.

INSTRUCTIONS AND RULES TO BE OBSERVED BY THE PATIENTS OF THE DISPENSARY; FIRST PRINTED IN 1791.

As the diseases which are most fatal to the poor either originate from, or are aggravated by, inattention to cleanliness, it is judged proper to circulate amongst the patients, the following cautions and rules of prevention, which are simple, and in the power of most persons to carry into execution.

Rules for preserving health.

I. Every day sweep your houses; open the windows, to admit fresh air; and wash your rooms once a week.

II. Keep your persons as clean as possible; and wash your children at least every morning.

III. Allow no person from a family affected with a fever, a flux, the small pox, or any other infectious disease, unnecessarily to enter your houses; nor any of your own family to go into any of your neighbours houses, when afflicted with those distempers.

IV. White-wash the walls and ceilings of your apartments twice a year, with quick lime slacked in hot water, which will not only contribute to health and neatness, but, when laid on hot, will effectually destroy vermin.

Rules for preventing fevers, and other infectious diseases.

I. As soon as a person is seized with any feverish complaint, let the feet and legs be bathed in warm water; and after drying them well, let the patient go to bed, and encourage sweating by drinking warm gruel, sage, or balm tea.

II. Let the sick person's linen be changed as often as possible; and, when it is taken off, be put immediately into cold water, before it be washed with hot water.

III. If the family have more rooms than one, the sick person should occupy one himself; he should have no more than one, or at most two attendants, and his neighbours should not be suffered to visit him.

IV. Every stool of the sick person should be received in a pan with a little cold water; some more cold water should afterwards be added, and it should then be immediately carried out of the chamber.

V. The apartment of the sick person must be kept very clean; the windows must be frequently opened; and the floor washed with hot water, that it may dry soon.

VI. After the recovery or death of the sick person, all the bed-clothes and furniture of the room should be washed; the walls and the ceiling white-washed with quick lime, slacked in warm water, and laid on hot.

At a quarterly meeting of the Governors, held the 5th of October, 1795, the nitrous vapour, recommended by Dr Carmichael Smyth, as an antidote to contagion, was ordered to be employed in the chambers of patients confined by fever or dysentery. This method of destroying contagion has not often been tried; little benefit has, therefore, been received from it; and it is to be feared, that the other instructions and rules have been much more frequently neglected than observed. These circumstances shew the necessity of appointing an *Inspector*, as has been proposed in the new Institution.

The great benefit arising from a regular and strict observance of a system of preventives, at the houses of the sick, is confirmed by the success of the Dispensary at Whitehaven.* Dr Dixon, physician to that charity, collected the various and most effectual means of mitigating the virulence, and preventing the progress, of contagious fevers; which he printed and circulated within the sphere of his practice.

"As an additional argument in favour of the prophylactic directions, it may be observed," says the Doctor, "that an ex-

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* "Previous to the establishment of Dispensaries, Whitehaven and Cockermouth were infested by nervous and putrid fever: Many of their respectable inhabitants became its victims; and among the lower class of people it prevailed with deplorable malignancy. The present period, happily, exhibits a different picture. Notwithstanding our connection with the metropolis of Ireland, and other commercial places, contagion rarely appears; or, when accidentally introduced, is readily suppressed."—*See Dr Dixon's "Observations on the Means of preventing Epidemic Fevers," annexed to the "Literary Life of Dr Brownrigg, M. D. F. R. S."*

act obedience to them has happily promoted the general health of the inhabitants of Whitehaven and its vicinity, for whose occasional benefit they were originally selected. Inculcated, with unremitting care, on the first appearance of contagion, they have sensibly weakened its power, and contracted its limits. Of the truth of this assertion, the annexed 'Abstract of a tabular statement of contagious fever cases,' which have fallen under the author's observation, since the institution of the Whitehaven Dispensary, affords a decisive proof."

But although the Whitehaven Dispensary has been so remarkably successful in suppressing fever, by carrying *all the means* of prevention and cure into *exact* execution in the habitations of the poor; yet it appears, from the Table, that this important object required long perseverance. That it would have been effected more speedily by the aid of a House of Recovery, requires no argument, after the facts that have already been stated.

Abstract of a tabular statement of contagious fever cases, from June 30, 1783, to June 9, 1800.

Years.	*Cured.*	*Dead.*	*Total.*	*Years.*	*Cured.*	*Dead.*	*Total.*
1783	75	1	76	1792	17	2	19
1784	401	9	410	1793	7	3	10
1785	350	20	370	1794	13	1	14
1786	91	6	97	1795	28	2	30
1787	21	1	22	1796	48	1	49
1788	53	7	60	1797	35	2	37
1789	103	2	105	1798	12	1	13
1790	288	21	309	1799	11	1	12
1791	74	6	79				
				Total	1627	85	1712

The following TABLE will not only be useful for tracing febrile contagion, but also assist an inspector in the performance of his duty.

A Specimen of the Regiſter for tracing the Progreſs of febrile Infection in Newcaſtle.

No.	*Names.*	*Number in each Family.*	*Street.*	*Date of Admission*	*Whence Infected.*	*Infection communicated to*
				1786.		
1	Ralph Symonton	4	Behind Castle	September 6	— — —	Surtees, No. 4.
2	Robert Symonton			— — — — 7		
3	Ann Symonton			— — — — 7		Donnison, No. 9.
4	Eleanor Surtees	3	Back Row	— — — — 27	Symonton, No. 1.	Ritchie, No. 10, 11, 12, 13.
5	Elizabeth Pratt	5	St Nicholas' Church Yard	October 9		
6	Mary Pratt			— — — — 12		
7	Peter Mason			— — — — 12		
8	Ann Pratt			— — — — 12		
9	Sarah Donnison	5	Back Row	— — — — 12	Surtees, No. 4.	Scarrow, No. 17.
10	Margaret Ritchie	5	Ditto	— — — — 16	Surtees, No. 4.	Gill, No. 14.
11	George Ritchie			— — — — 17		Campbell, No. 16.
12	Elizabeth Ritchie			— — — — 17		Cornforth, No. 21.
13	William Ritchie			— — — — 22		
14	Isabel Gill		Ditto	— — — — 23	Ritchie, No. 10.	
15	Thomas Sharp	5	Queen Street	— — — — 23	— — —	Bayne, No. 26. Slater, No. 32. Hodgson, No. 36.
16	William Campbell	3	Back Row	— — — — 24	Ritchie, No. 10.	Campbell, No. 22.
17	Elizabeth Scarrow	5	Queen Street	— — — — 26	Donnison, No. 9.	Her Daughter, No. 30.
	&c. &c.		&c. &c.	&c. &c.	&c. &c.	&c. &c.

REPORT

OF THE

COMMITTEE.

REPORT OF THE COMMITTEE FOR PROMOTING AN INSTITUTION FOR THE CURE AND PREVENTION OF CONTAGIOUS FEVERS, IN NEWCASTLE AND GATESHEAD.

WHATEVER tends to smooth the rugged paths of calamity, and the miseries of life, will always meet with the approbation of the benevolent. Of such miseries none exhibits so general and so affecting a scene of wretchedness, as a poor man's family, confined to a crowded, dirty habitation, by a fever. In this town, however, there has hitherto existed no charitable asylum for the reception of this prevalent disease. If the patient be conveyed to the poor-house, the infection, if not already there, will soon spread amongst the unfortunate inmates; if he stay at home, from want of the means of ventilation, cleanliness, and proper support, contagion is generated, and often widely diffused.

To better the condition of the poor; to weaken the contagion of fever, upon its first appearance in their own habitations,—and, when their habitations are dangerous to themselves and neighbours, to remove them into a comfortable house, where they can enjoy pure air, and all the resources of art; to rescue them, and to preserve all other ranks of society from contagion, is the express design of the INSTITUTION, which has been proposed to the consideration and protection of the inhabitants of Newcastle and Gateshead.

An establishment of so great importance and extent, the Committee are conscious, must be progressive: It cannot be expected to be formed in a moment, nor soon to attain a state of perfection. But they hope it will not seriously meet with opposition; and they have no doubt, when all groundless apprehensions and fanciful fears of a House of Reception being a cause of spreading infection are done away by a full recital of facts, that an institution so pregnant with good will meet with the warmest approbation from the humane and intelligent.

With the view of removing all reasonable apprehensions of the danger of infection spreading from fever-wards, and of more fully pointing out the important advantages which will result from them, the Committee propose to pursue the following method:—1. The safety

of fever-wards, and their power in preventing infection spreading in hospitals, infirmaries, work-houses, and populous towns, shall be established by authentic documents.—2. The great danger of contagious fevers being introduced into hospitals and infirmaries, where fever-wards are not established, shall be pointed out.—3. The efficacy of fever-wards in diminishing a number of chronic complaints shall be proved.—And 4. A calculation shall be made of the number of beds necessary to enable a *Board of Health* to prevent the progress of contagious fevers in Newcastle and Gateshead.

SECTION I.

OF THE SAFETY OF FEVER-WARDS, AND THEIR POWER OF PREVENTING INFECTION SPREADING IN HOSPITALS, INFIRMARIES, WORK HOUSES, AND IN POPULOUS TOWNS.

DR HAYGARTH, who has passed a long and meritorious life in unfolding the laws of contagion, was requested by Dr Percival, previous to the formation of the BOARD of HEALTH at Manchester, to furnish him with observations, in time for communication to a meeting of some of the most intelligent gentlemen of the place, to be held on the 7th of January, 1796.—The following is an extract from Dr Haygarth's answer to Dr Percival:—

CHESTER FEVER-WARDS.

"*Chester, January 6th*, 1796.

"YOU may remember, that in the Chester Infirmary we have, for the last twelve years, received all infectious fever-patients that require our assistance into the fever-wards, one for each sex being appropriated to this purpose. This institution arose from the speculations, which you know had engaged my attention, on the nature of contagion. Numerous facts have proved, that a person liable to receive the small-pox was not infected by a patient in the distemper, when placed at a very little distance. I next considered the nature of the contagion which produces putrid fevers. I soon discovered, that their infectious atmosphere was limited to a *much narrower* extent, than even that of the small-pox. I ventured, therefore, to propose the admission of typhus fevers into the attic story, on one side of our Infirmary, to be

separated into two wards. From the experience of TWELVE YEARS, I am warranted to maintain the SAFETY of this measure, if conducted under very easy practicable regulations. During this period, it never was *suspected*, that infection has been communicated *to a single patient* in other parts of the house."

" During this war, Chester has been unusually exposed to the danger of putrid infectious fevers. Many new-raised regiments, coming from Ireland, with numerous recruits taken out of jails, remained in Chester for a few weeks after their voyage. Great numbers of these soldiers and their women were ill of putrid fevers, and were immediately received into the fever-wards of our Infirmary. If such contagious patients had been distributed in the small public-houses and poor lodging-houses, through the city, the consequences to many of our inhabitants must have been dreadful."

" By taking out of a house the first person who sickens of a fever, we preserve the rest of the family from infection, together with an *indefinite* number of their neighbours, who would otherwise catch the infection.—At this very time, when the inhabitants of Manchester, and many other places, are afflicted with a fatal contagious epidemic, only two patients are now in our fever-wards, and both convalescent: and the Apothecary to the Infirmary, who attends the out-poor of the whole city, informs me that he has now *not a single fever-patient* under his care."

" The observations, above advanced, are founded on such NUMEROUS FACTS, that they must give conviction to every impartial inquirer, not only of the *safety*, but of the *efficacy* of the proposed regulations. *I am confident, that our two fever-wards do ten times more real good in the prevention of misery, than all the other parts of the Infirmary.*"

" *Chester, April* 27, 1796.

" THE Chester Infirmary is a close square building, the inner area being eighteen yards and a half by fourteen yards. The attic story of all the north side of the house, divided into two wards, has been appropriated to the reception of patients in infectious and other fevers.

ever since the year 1783. Patients who have no fever, are lodged *under* and *on* all the other sides of this area. The windows of the fever-wards during the day are almost constantly open into all the other wards. One ward is situated WITHIN THIRTEEN YARDS of the FEVER-PATIENTS, with whom it communicates on the same floor, by a passage and doors frequently open; and yet, during the whole period of this establishment, (now above twelve years) it has NEVER even been SUSPECTED, that the patients in other parts of the house have *caught any infection* from the *fever-wards*, by any contamination of the atmosphere; or from any transgression of the *rules of prevention*; which require ventilation, cleanliness, and separation, and may be seen in Howard's Account of Lazarettos.—Some inhabited houses are placed but a little distance from the fever-wards: and STANLEY-PLACE, inhabited by very genteel families, is not far distant from them."

LIVERPOOL FEVER-WARDS.

THE following was presented along with the preceding letters to the meeting called at Manchester, for the formation of THE BOARD OF HEALTH. The practical facts and observations advanced in these letters, by two physicians of great medical and philosophical knowledge, and active philanthropy, confirming the opinions of Drs Percival, Ferriar, Bardsley, and Holme, and the rest of the medical officers of the Infirmary, were decisive in favour of an establishment, which promises to be of so extensive benefit to Manchester, and also to every other populous town.

EXTRACT *of a* LETTER *from* DR CURRIE, F. R. S. *of* LIVERPOOL, *to* DR PERCIVAL.

"*Liverpool, May 5th*, 1796.

"TILL November, 1786, there was no place for the reception of fever in Liverpool. At that time, two wards were fitted up in the Infirmary, one for each sex, which were afterwards occupied by such cases of fever as offered for admission. It was not expected, except on very particular occasions, that cases of fever should be sent by practitioners on purpose to be placed in these wards; because, holding only five beds each, they were not equal to general accommodation: but if a case of fever presented itself accidentally for admission, it was not

now rejected as formerly, if a bed in the fever-wards was vacant; and in several instances *where fever spread rapidly, in situations in which it could not be checked, it was arrested in its progress by removing the persons affected into the wards of the Infirmary*, already mentioned."

"Patients in fever were admitted in this manner for FIVE YEARS and upwards; and, by a list taken from the register, it appears that *two hundred and thirteen cases* passed through the fever-wards during this interval. In this space of time, *there was* NO INSTANCE *of the contagion being communicated to the other patients of the house.*"

"Our fever wards were as indifferently constructed, as can be well imagined, for the purposes to which they were devoted. To obviate objections made to the reception of fever, they were several times changed; and, at length, two wards were fixed on, in the left wing of the building, and on the ground floor. These were selected, because a direct communication could be obtained between them and the external air, and the patients were conveyed into them, without the necessity of using the common staircase of the wing. This may be said to have been their only advantage; for, properly speaking, they are cellars. They sink on one side six feet under ground, and on the other four, the ground sloping. They are twenty-one feet square each, and nine feet in height. By proper care, however, they admitted of sufficient ventilation and cleanliness, and no ill effects were experienced from their dampness. They contained each five beds, and occasionally six, and even seven. WITH ALL THEIR DISADVANTAGES, *the benefits derived from them were most important;* and the treatment of the patients was attended with a degree of *success that has not*, perhaps, in any circumstances, *been surpassed.*"

"About the end of the period already mentioned, two large and airy wards were fitted up at the workhouse for fever; and, an arrangement having been made with the parish committee, that such cases of fever as presented themselves at the Infirmary should be received into those wards; from that time the reception of fever into the Infirmary has ceased."

"The wards in the workhouse are divided from each other by a partition, six feet two inches high; but over this partition the air pas-

ses freely. They are each forty feet in length, twenty-three in breadth, and nine and a quarter in height. They are in every point of accommodation unexceptionable; but THE ONLY ACCESS TO THEM IS THROUGH THE GREAT STAIRCASE, COMMON TO THE WHOLE BUILDING; AND IMMEDIATELY OVER THEM IS THE NURSERY, AT PRESENT INHABITED BY SIXTY CHILDREN.—These wards have been fitted up under the direction of the Physicians of the Dispensary, by whom they are attended; and, notwithstanding the circumstances already mentioned, I have the authority of DR RUTTER, DR M'CARTNEY, and DR RENWICK, for saying, *they have no reason to believe that, in a single instance, the contagion has been communicated from them to the other parts of the building.* These wards contain each at present ten beds, but on an emergency they might hold each two more. In walking through them, no effluvia are perceived. They are as little offensive to the smell as any private apartment. Exactly in the centre, between the two wards, is the apartment of the two nurses, separated from the patients on each side by a partition six feet two inches high, as has already been described, but open all round from that height to the roof. One of the present nurses has lived there eighteen months, the other four. I inquired of them, if they either of them had been infected, and they assured me they had not. THESE FACTS NEED NO COMMENT.—The practice in the fever-wards of the workhouse, as at the Infirmary, has been attended with EXTRAORDINARY SUCCESS."

HOUSE FOR FEVER ANNEXED TO THE NEWCASTLE INFIRMARY.

ALTHOUGH the evidence of the Chester Infirmary, and of the Infirmary and Workhouse at Liverpool, proves incontestably, that contagious fevers, under proper regulations, may be admitted under the same roof, without any danger of infection spreading through the building; yet it is a matter of great convenience, that they should be received into a separate and distinct building.

This advantage is attached to the *House for Fever* annexed to the Newcastle Infirmary. It stands at the west end of the new building, and is separated from it by a strong brick wall. It has one door from the Infirmary, at the end of the gallery, which enters upon its staircase; but which may be built up, if judged necessary. It has its own proper door on the north front; and the patients will be conveyed to

it in a sedan chair, with a moveable lining, by a passage at a considerable distance from the approaches to the Infirmary. A convenient piece of ground also lies before the north front, which, when walled in, will prevent any access to the out-grounds of the Infirmary, and will be found convenient for drying the fever-patients' clothes.

The fever-house has also its own kitchen, and bath room for washing patients on their reception; for taking their infected clothes from them for purification; and for putting on their flannel dress before they be conveyed to the wards.

This house contains three lofty wards, completely ventilated by opposite windows; and each ward has annexed to it a scullery and water closet, and holds six beds. The garret is eight feet high, and contains a room or two for a single patient; a nurse's room; a wash house; and other conveniences.

From this description it will appear, that all communication betwixt the Infirmary and the Fever-House is effectually prevented; and that the former will be as little liable to infection from the latter, as if either had been placed on the opposite banks of the river.

MANCHESTER FEVER-WARDS, CALLED THE HOUSE OF RECOVERY.

THE Manchester fever-wards were the property of the Governors of the Infirmary, and situated within the precincts of that charity. The institution is maintained by the Board of Health; and the patients are attended by the medical officers of the Infirmary and Dispensary. This situation was selected, because it was free and open; and also because it was near the Infirmary, in order that the fever-patients might be more frequently visited by the physicians, and that the physicians clerk might be able to afford immediate assistance in cases of sudden danger and emergency. By this measure, a complete arrangement was formed, at once *efficient*, *economical*, and *permanent*; and by which the Infirmary has been secured from contagion, and its interests most materially increased, as will afterwards appear.

Previous to the establishment of fever-wards (says DR FERRIAR,

Medical Cases and Reflections, vol. iii.), when a patient happened to be seized with an infectious fever in the Manchester Infirmary, the disease was apt to spread to an alarming degree, so as to require a general dismission of the patients. But since these wards have been opened, though bad fevers have been accidentally introduced, yet by removing the patient on the first attack, the disease has always been prevented from extending, without the necessity of dismissing a single patient.

So far was infection from spreading about the Manchester fever-house, that the adjacent streets, which in eight months previous to its opening, in 1796, furnished two hundred and sixty-seven cases of fever, at the end of the two subsequent months furnished only *twenty-five;* in July, 1797, only *five;* in August, only *one;* and in September, of the same year, *none.*

Not long after opening the House of Recovery, Dr Ferriar was requested by the proprietors of a large cotton mill, adjoining a village within a mile of Manchester, to inquire into the circumstances which had produced an epidemic fever amongst the workmen. He traced the origin of this fever in the village from Manchester. Every house in the village was crowded; cellars were inhabited; and there were several lodging-houses. Several patients were immediately carried to the House of Recovery; the lodging-houses were cleared of superfluous inhabitants, and fumigated with the vapour of nitrous acid. These proceedings checked the progress of the disease for some days; but as one or two patients had objected to removal, it broke out again. Eight more patients were removed to the Fever-House in one day. "The situation of two of these was deplorable: their parents had been swept off by the disease; and as great terror prevailed in the neighbourhood, these little wretches were left, unknown to the proprietors, almost destitute of every thing. One of them died from the effects of previous hunger, very soon after its reception to the House of Recovery."

After the second removal, the fever ceased, and the village continued healthy. The Committee cannot prevail upon themselves to leave this part of their subject, without offering the following melancholy contrast, in a place where there existed no House of Recovery;

no fever-wards annexed to an Infirmary, to receive the miserable sufferers within their bosom.

"In the year 1787," says the Rev. Joseph Townsend, Rector of Pewsey, "out of two hundred poor families, sixty-three poor people died of the low contagious fever. When one family died off, another succeeded to their cottage, and the new-comers caught the disease."

SECTION II.

OF THE GREAT DANGER OF CONTAGIOUS FEVERS BEING INTRODUCED INTO HOSPITALS AND INFIRMARIES, WHERE FEVER-WARDS ARE NOT ESTABLISHED.

IN all large and populous towns, where an Hospital or Infirmary is established, there is very considerable risk of contagion being introduced. For this reason, contagious diseases, and especially fevers, are, in general, strictly prohibited admission into the Hospitals of England, *unprovided with fever-wards.*

Such a prohibition, nevertheless, cannot effectually secure any Hospital or Infirmary from the introduction of the contagion of fever; for it is known to lie inert in the body from a few days to several weeks. A physician, indeed, may easily distinguish a contagious fever, when strictly formed; and so far the prohibition, in several instances, may have been useful in preventing its introduction into a ward: but, it must be observed, that before a physician can have an opportunity of ascertaining the real nature of any disease, the patient has remained for a considerable time *in the waiting-room, crowded with other patients*, some of whom may have received the contagion; and from this cause the infection has frequently been inadvertently received into the Hospital; and often has been spread, by the out-patients in waiting, widely *into the country.*

But the following is a much more frequent way in which fever is introduced into Hospitals without fever-wards. When fevers prevail in a town, or even subsist in a single infected house, poor persons, with latent contagion, apply for admission for, perhaps, a rheumatism, or a catarrh; no medical sagacity can detect the lurking poison. The patient is admitted—and the fever does not discover itself

for some days, or weeks. If the Hospital be provided with a fever-ward, still, by removing the infected person on the first or second day of the fever, the rest of the patients in the ward may escape.

From the above cause, "The Liverpool and Manchester Infirmaries, although from their first institution the admission of fever was strictly prohibited, yet, in both of them, contagious fever was inadvertently received, and spread to so alarming a degree, that the patients were taken out of the wards, in order that they might receive a thorough purification."—But no such instances have occurred in these institutions, since the establishment of fever-wards.

From similar causes, the medical Officers of other Hospitals have also received the fatal poison of fever.

Sir William Watson, M. D. informed Dr Haygarth, that in St Thomas's Hospital, Dr Akenside (a native of and an honour to Newcastle), Drs Russell and Grieve, and Mr Waring, Surgeon, all of St Thomas's, fell victims to the hospital fever from having received the infection in the consulting-room. According to Dr Woodville, two other physicians of the same hospital, namely Drs Watkinson and Keir, and one of Guy's, Dr Munckley, died of the same disease.

Three physicians and a medical student of one of the largest hospitals in London, died, within the space of eight years, of malignant fevers. This intelligence Dr Haygarth received from the physician who succeeded the last who died; but he did not chuse that his name, or that of the hospital, should be mentioned.—If so many physicians fell victims to contagion in a few years, what must have been the mortality in the crowded wards of these and other hospitals in the metropolis, notwithstanding the restriction against the reception of infectious diseases!

From what has been advanced, it will appear, that the true and only certain way to secure Hospitals and Infirmaries from the contagion of fever, is to prevent its progress, and to exterminate it at the habitations of the poor.

Dr Haygarth, who has laboured so successfully to promote the beneficent establishment of fever-wards, accompanied with the other preventive measures to be carried into effect in the houses from whence the patients are taken, addressed some exhortations to two most respectable medical friends in London. One of them, Dr Saunders, Physician of Guy's Hospital, informed him that two wards in *that* Hospital are to be appropriated to the general reception of infectious fevers. The other, Dr Heberden, Physician to St George's Hospital, informed him that the charity would soon receive a large accession to its funds, and with Dr Heberden's assistance, it is likely that part of this money will be applied to the erection and maintenance of fever-wards.

Besides Dr Saunders and Dr Heberden, Sir Walter Farquhar, Dr Garthshore, Dr Lettsom, Dr Pearson, Dr Willan, and many other Physicians, have given their public sanction to fever-wards. Under such patronage, it is reasonable to expect, that, agreeably to Dr Haygarth's proposal, six or eight Hospitals may open a spacious ward for each sex, in some part of the building, or closely adjoining it. "Except in checking the ravages of the small-pox," says Dr Haygarth, "no human exertion could be employed with so much success to prevent the misery and destruction of the poor."

SECTION III.

EFFICACY OF FEVER-WARDS IN DIMINISHING THE NUMBER OF CHRONIC COMPLAINTS WHICH CROWD UPON INFIRMARIES AND DISPENSARIES.

CONTAGIOUS fevers, by their violence and frequent relapses, and the poverty and weakness they leave behind them, excite various obstinate complaints, such as visceral obstruction, hectic, dropsy, scrofula, and the like, which crowd our hospitals and dispensaries, and which occupy the time and attention of the faculty, and waste the funds of these charities, too frequently without any lasting advantage to the patients. A small house, annexed to every hospital, for the reception and cure of fever, would do infinitely more good, by preventing the formation of these maladies, than all the efforts of the faculty to cure them; and surely prevention is better than cure.

" It is a curious and interesting fact," says the benevolent Mr Bernard, " that the establishment of one solitary house of recovery at Manchester, should have nearly put an end to the contagious fever in that place; a place where the cotton mills, and a variety of other circumstances, aided by extreme population, furnish so abundant a supply for the renewal of infection, that in one year, the average of fever should be diminished from 471 to 25,—the fever-cases of the general Infirmary to *one-fourth*,—the other patients to nearly *half*,—and the proportion of mortality under the fever from a *ninth* to an *eighteenth*, afford a pleasing example of what may be done by active and intelligent benevolence, labouring for the benefit of its fellow-creatures. This, however, has been attended with many other advantages, in the diminution of the general mortality of that place, and in the improvement of the domestic comfort and well-being of the poor." See *extract from an account of the institution to prevent the progress of contagious fevers in the metropolis*, by Thomas Bernard, Esq. Dr Ferriar also observes, " The most striking proof of the benefit which the public derives from this Institution (viz. the Board of Health) results from observing the diminution in the number of home-patients *(i. e.* patients attended at their own habitations) of the Infirmary. The number of home-patients from June 1795, to June 1796, was 2880; from June 1796, (immediately after the opening of the House of Recovery) to June 1797, the number of home-patients was 1759; that is, the illness of 1121 persons has probably been prevented by this institution, in one year, (for the home-patients' list had generally *increased* every year)." *Medical Cases and Reflections*, vol. iii.

SECTION IV.

CALCULATION OF THE NUMBER OF BEDS WHICH MAY BE REQUIRED TO ENABLE THE BOARD OF HEALTH TO PREVENT THE PROGRESS OF CONTAGIOUS FEVERS, IN NEWCASTLE AND GATESHEAD.

" IT is a point capable of demonstration," says the learned and judicious Dr Currie, " that hospitals for fevers stand pre-eminent in point of utility over all other hospitals; those for accidents requiring the immediate assistance of surgery, perhaps, excepted. The benefit derived from hospitals in other cases consists in removing disease, and

is confined to the patient himself; but in cases of contagion, the evils prevented are much greater than those remedied." Every single removal, upon an average, may be calculated to prevent two or three cases of the disease in a family; and in cellars, garrets, lodging-houses, too much crowded, long infected, or incapable of proper ventilation, the removal of one person will prevent the disease in at least twenty, and perhaps in a whole district; provided the infected habitations be purified, without which contagion would be preserved in the same place for many months.

The success attending the Manchester house of recovery affords a striking proof of the truth of these remarks, and will evince that a very small fever-house, and a very moderate expense, will be required for suppressing and eradicating contagion in this town, and for preventing its future propagation.

The Manchester house of recovery, at its establishment, contained only 28 beds. When it was first opened, 267 patients, labouring under fever, were confined in the streets adjacent. Every patient, upon an average, remained three weeks in the house of recovery; when he was admitted, his body was washed, and he was accommodated with clean linen, a flannel dress, and a clean bed; and his own clothes were purified, and given to him, when he was dismissed from the hospital. In the course of six weeks, the House of Recovery might have received three successions, that is 84 patients, or at least was capable of receiving that number, upon the average of a fresh succession every three weeks, making seventeen successions in all in a year. By removing the patients, and purifying the infected habitations, in less than two months the fever cases were reduced from 267 to 25; and in a little time fever was almost totally exterminated, as has been already remarked. The annual expenditure only amounted to 400l., and the fitting up the house to 200l.

From the slightest inspection of the table annexed, it will appear, if the habitations of the poor in Newcastle had been purified, that, in many of the months comprehended in the table, contagion might have been eradicated, without removing, perhaps, a single patient. But let it be supposed that there should be at one time even 100 poor persons

confined to their own habitations by fever, which is more than have ever appeared on the Dispensary list in one month; upon such a supposition, fever wards, containing 10 beds, will bear the same proportion for Newcastle, as 28 beds for Manchester, when the House of Recovery opened with this number of beds, and 276 fever patients on the list of the Dispensary there; with this advantage in favour of Newcastle, that very few of the poor live in cellars, the great cause of the prevalence of fever in the former place.

That no such number of beds as ten are likely ever to be wanted at one time in Newcastle, is probable, from this circumstance: Ten beds, receiving 17 successions in 12 calendar months, being the average of one succession every three weeks, would allow 170 fever patients to pass through the house in one year; and if every removal, upon an average, should prevent only two cases of fever, which is a very moderate computation, this would amount to 520,—a number of fevers far exceeding whatever has hitherto appeared in Newcastle in one year.

But a prospect still more pleasing presents itself to view: The removal of one or two patients, and the purification of one very bad infected house, would, upon an average, prevent 20 cases of fever for each removal; by which the fever house would, in a short time, either contain very few patients, or be entirely empty,—a great diminution of chronic complaints take place,—and the public safety be secured.

SECTION V.

RECAPITULATION.

FROM the account which has been given of the fever-wards *within* the Infirmary at Chester, it appears that they have, under proper regulations, completely secured that city, often so peculiarly exposed to the worst kind of putrid fevers, from infection. That when fatal contagious fevers prevailed in the neighbouring towns, only two cases of fever occurred in the fever-wards, and not one in any other part of the city.

Although one of the *common* wards of the hospital is situated within thirteen yards (contagion, however, cannot be conveyed through the

air, according to the evidence of facts ascertained by Dr Haygarth, to a distance one hundred times less) of the *fever patients*, with whom it communicates by a passage, and doors frequently open, yet during a period of twelve years, it never was suspected that contagion was communicated to a single patient in any other part of the hospital.

The fever-wards *within* the Infirmary of Liverpool, and those *within* the Work-house of that place, have produced evidence equally strong of their safety and efficacy. Those of the Infirmary have secured it from contagion, and arrested the progress of infection when rapidly spreading in particular situations of that populous town; and those *within* the Work-house, an immense building often containing 1200, have, since the year 1793, secured it from infection, although the wards are in the centre of the house, and cannot be entered but through the common staircase, yet not a single instance has occurred of contagion being communicated from them to persons in any other part of the building.

From a review of the account of the Manchester House of Recovery, it will be also found, that it in a most rapid manner almost entirely extinguished the contagion of fever in that populous town, and prevented the progress of an epidemic infectious fever in a village in the neighbourhood.

From the account given (in Section 2) it appears, that, in some of the London hospitals destitute of fever-wards, the medical officers have received the contagion in the prescribing-room; and the patients were exposed to infection in the waiting-rooms, notwithstanding the restrictions against the admission of infectious diseases; and that one of these hospitals has opened two fever-wards, and there are expectations of others following the example.

From Section 3, it appears that fever-wards, by subduing contagious fever, prevent a host of chronic diseases, which result in consequence of the debility and distress of that prevalent calamity amongst the poor. The House of Recovery in Manchester, as has already been remarked, reduced, in one year, the fever cases to *one-fourth*, and the other patients in the general Infirmary to nearly *a half*.

Those who are not acquainted with the manner in which infectious fevers are propagated, and the contagion rendered virulent in the crowded, ill-aired habitations of the indigent, and with the power of ventilation and cleanliness in mitigating the disease, and preventing its progress, will be astonished at the success of FEVER-WARDS. But if they will recal to their memory, the unvarnished picture given of the sad condition of the poor (page 6th of *the Proceedings of the Committee*) confined by a contagious fever to their wretched habitations; and the manner by which contagion spreads to other ranks of society, far and wide: when they consider, that by removing the worst cases from the worst infected houses, to well-aired fever-wards; and purifying the habitations, the furniture and clothes of the infected, by which all contagion is destroyed, their astonishment will cease; and they will be convinced that a Fever Hospital, which from want of information may have occasioned apprehension, can never, if properly regulated, diffuse contagion: Every patient will be brought to it in a sedan chair; before he enters the fever-ward he will be stripped of his infectious clothes, (which will be purified) his body will be washed; and a clean dress given him. In the wards he will enjoy a clean bed; cool air; and all the means of mitigating the virulence of his distemper. The infectious effluvia arising from his body will be diluted with so much air as to render it innoxious; and all contagion from foul linen, &c. will be destroyed by the proper antidotes, and be immediately carried out of the ward. Besides ventilation, the chemical means of destroying contagion will be constantly employed in the fever-wards. By these measures even nurses and attendants of the sick are safe; and no contagion can be received but from absolute contact; or a very near approach to the patient.

From a calculation in the preceding Section it appears, that a small FEVER HOUSE will be sufficient for the reception of patients recommended by the BOARD OF HEALTH, to enable it to suppress fever in Newcastle and Gateshead: And that this important object may be accomplished, at the expense of a few hundred pounds annually, is very evident, if the same wise, economical, efficient, and permanent *co-operation* of the Infirmary and of the Dispensary be adopted here as at Manchester.—*See article Manchester Fever Wards, page 2d of this Report.*

Having given this summary recapitulation of facts, and plain deduction of inferences, the Committee conclude with hoping that the public will be convinced, that the Institution which has been suggested, if it meet with proper support, will rescue the poor, and secure the middle and higher ranks of society from contagion.

At a MEETING of the COMMITTEE held this day, MAY 14, 1802,

The Rev. Dr PROSSER in the Chair,

RESOLVED UNANIMOUSLY,

THAT the preceding REPORT, which has been read, and approved of, be printed; that a copy be transmitted to each GOVERNOR of the Infirmary, and Dispensary; and that it be extensively distributed amongst THE INHABITANTS of Newcastle, and Gateshead.

ROBT. DOUBLEDAY, *Secretary.*

A TABLE,

Shewing the number of fevers admitted on the books of the Dispensary, from the 1st of September, 1797, to the 1st of September, 1801; distinguishing the numbers admitted every year, and each month of every year.

	Years of the Institution	Sept.	Oct.	Nov	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.	Total.
Sept. 1797, to Sept. 1798	21	3	5	15	6	4	6	6	9	2	3	4	2	65
—— 1798, —— 1799	22	1	5	3	1	6	2	2	8	5	6	9	3	51
—— 1799, —— 1800	23	1	5	10	7	18	10	12	6	6	10	13	23	121
—— 1800, —— 1801	24	23	44	33	28	25	34	29	29	30	38	33	41	387
		28	59	61	42	53	52	49	52	43	57	59	69	624
—— 1801, to April, 1802	25	55	64	38	55	35	27	27						

APPENDIX.

THE ROYAL INFIRMARY at Edinburgh stands in a *fully inhabited* part of the city, and is an asylum for those labouring under fever, as well as under other diseases. Between the windows of the clinical ward appropriated to the women, as well as of a *fever-ward*, and those of a neighbouring house, thirty feet do not intervene. These wards have windows almost constantly open on each side, to the above house, and to others, yet no instance has occurred, within the recollection of Dr Duncan, Professor of Medicine, which extends more than thirty years back, of infection being conveyed to any of these houses. So little apprehension, indeed, have the inhabitants of Edinburgh, of the Infirmary being a cause of diffusing contagion to its neighbourhood, that a piece of ground (opposite the College, and nearly adjoining to one of the fever-wards), being put up to auction, although it only furnishes sites for five houses, and in some points is not more than forty or fifty feet from the fever-wards, lately sold for the amazing sum of 11,000l.

The above account is chiefly taken from a printed letter transmitted, by an ingenious student of medicine at Edinburgh, to Manchester, during the alarms, which seized the inhabitants in the vicinity of the House of Recovery. It was at that time thought of importance to establish, by facts, that febrile contagion could not be conveyed through the air to the distance of *thirteen yards* from the poison. No fears were entertained by the medical officers of the Infirmary about contagion being carried from the House of Recovery, notwithstanding it is placed so near the former.

To obtain more complete information respecting the fever-wards of the Royal Infirmary at Edinburgh, Dr Clark addressed several inquiries to Dr Gregory, Professor of Medicine, requesting an answer in time to be added to the preceding Report. Notwithstanding Dr Gregory was particularly engaged, at the time when the inquiries reached him, with a multiplicity of academical and professional duties, yet he immediately, in the most obliging manner, transmitted an *interesting* and *instructive* letter, the importance of which will be seen by the following extracts.

EXTRACTS *from* DR GREGORY'S LETTER, *dated May* 16, 1802.

" I have lost no time," says the Doctor, " in speaking both to Dr Hamilton and Dr Rutherford, who are Physicians to the Infirmary, and have the care of the fever-wards. In these I do not practise, but in the clinical wards, which I am allowed as professor."

" The men's fever-ward was first opened in our Infirmary, near twenty-five years ago, at the urgent request of the late Dr Hope. There never has been any doubt or dispute about the very great and uniform advantage of such a ward to the patients, and to the public at large; nor has there ever been any evidence or *suspicion* of its increasing *contagion*, or diffusing it thro' the hospital, or in its neighbourhood. On the contrary, so strongly and immediately were the good effects of it experienced, that the Physicians were most anxious to procure a similar ward for the women: and when the lying-in ward was abolished by the managers, it was appropriated to the reception of women in fevers."

" The ward for the men contains eighteen beds, and that for the women contains fourteen beds, without any crowding; *and have very seldom been full!!*

" There is no communication between the patients in them and the other patients in the Hospital: indeed as little communication as possible between the fever-wards and the rest of the Infirmary; some little there unavoidably must be by the Physicians, Surgeons, Apothecary, Clerks, &c.; possibly by the nurses passing other nurses or patients on the stairs. But these small chances of contagion are but trifles, mere dust in the balance, bearing no proportion to the infinitely greater danger to the public from the *production*, *accumulation* and *propagation* of the most virulent contagion, if such fever patients were allowed to lie and rot, neglected or mismanaged, in their own wretched dirty habitations."

" I have visited many more than 1000 patients in fevers, many of these ten, twenty, or thirty times; yet I am certain I never brought the contagion into my own family; and I never heard of any instance or suspicion of my having conveyed the contagion to any of my patients,

or to any other person. But admitting, for sake of argument, the possibility of contagion being conveyed in this way, the danger of this ever happening must be infinitely less in a well-regulated fever-ward, ventilated, fumigated, white-washed, &c. than in the waiting room of an hospital, or in such horrid places as I have often been in to visit patients in fevers; places where the air was so tainted with poisonous effluvia, that I breathed with difficulty. A proper fever-ward is just a contrivance to prevent the accumulation, and the virulence of those poisonous contagious effluvia; which is nearly equivalent to preventing the production of them."

" It will be easy to explain and illustrate to the satisfaction of the public, that the effluvia in question are dangerous, as issuing plentifully from the bodies and especially the lungs of people ill of fevers; and still worse when accumulated in close ill-aired rooms, or retained in soft furniture, bed or body clothes, or even adhering to walls, floors, &c.; but when united with other matters, or perhaps decomposed by them, as in white-washing with lime; or fumigating with vinegar, nitrous, sulphuric, or muriatic acid; they become inert and innocent, or are destroyed: nay that certainly they are made innocent by mere diffusion in much air (that is by ventilation) in the same way as aqua fortis diluted with a sufficient quantity of water, may be made a safe and pleasant beverage: or carbonic acid gas, or azote, which, when pure, will in a moment destroy life; but when diffused in the air even of a *small room*, will be deprived of their deleterious property, and even produce no sensible effect. Even so it is with the effluvia from our bodies both in fever, and in health."

" The degree of ventilation necessary to prevent the danger of contagion from much febrile effluvia, may easily be obtained in a proper fever-ward; and of such consequence is it to the patients, that here we reckon it more than half the cure; and I would much rather undertake the cure of patients in fever with the help of *pure, cool air*, and no medicines, than with all the medicines in the dispensatory without the help of pure cool air. I have often observed, that on bringing fever patients from their own foul, tainted, ill-aired houses into the clinical wards, which are always kept as pure and cool as possible, that in a few hours, even before they got any medicines, their symptoms were much relieved; and Dr Hamilton assures me, that he has often observed the same in the fever-wards."

"I have had occasion to know that many well-meaning and really sensible people, merely from being unacquainted with the subject, have conceived a Fever-Ward, or Fever-Hospital, to be the very reverse of what it really is—a great magazine of the most pestilential contagion—WHEN IN TRUTH, IT IS THE BEST PREVENTIVE OF THE FORMATION OF MANY SUCH RECEPTACLES AND SOURCES OF CONTAGION."

In a postscript to his letter, Dr Gregory mentions two curious facts, relative to the most virulent of all febrile contagions, that of the plague. "I have been informed," says he, "by the Rev. Mr Carlyle, Arabic Professor at Cambridge, Chancellor of the Diocese of Carlisle, and Vicar of Newcastle, who has resided at Constantinople, and had many opportunities of observing the plague, that it has scarcely ever been known to pass even the very narrowest streets or alleys, probably not ten feet wide; and that people are safe in their own houses, while it rages in the opposite, owing to the diffusion of the effluvia in much air."

"The second instance was related to me by Mr Tainsh, a sensible, active, well-informed man, late surgeon of the *Theseus*, of 74 guns, who in 1799, off the coast of Syria, received Capt. Phillipeaux and four seamen on board, who had the *plague*. The Captain was placed in a cabin by himself, but would submit to no medical treatment, and died on the fourth day. The surgeon fitted up a birth for the other four, apart from the rest of the crew (500 or more), with no better separation than painted canvass, and kept them as cool and clean as possible; only one of the four died.—Not one of the crew took the infection, which, probably, but for that precaution, would have destroyed one-half of them."

Such a testimony, in favour of fever-wards, coming from a physician of such distinguished abilities, cannot fail to have its due force—from a physician who has spent thirty-four years of his life in learning, in teaching, and in practising medicine, in a most justly celebrated university, in an extensive infirmary, and in a large populous city.

A LETTER TO THE MEMBERS OF THE WEEKLY COMMITTEE OF THE GOVERNORS OF THE INFIRMARY AT NEWCASTLE.—PRINTED AT THE REQUEST OF THE COMMITTEE.

GENTLEMEN,

As the decision of the question referred to a SPECIAL COURT of the GOVERNORS of the Infirmary, to be held on the 24th instant, is, without doubt, the most important that has ever occurred in the annals of the Charity,—and as I have, with your concurrence, taken a very responsible part in the late proceedings, I think it my duty to shew that the motives and principles which have influenced my conduct are supported by attentive observation and long experience, and do not rest on the uncertain foundation of hypothesis and speculation.

In the year 1768, it was my lot to enter into the sea service of the East-India Company. It is well known that the ships, in voyages to India, are much crowded with military recruits, picked up from jails, or enlisted from the refuse of society in populous and manufacturing towns. From these causes contagious fevers are frequently introduced. Sometimes, from sloth and dirtiness, they are generated during the voyage.—The remittent fever, too, contracted at unhealthy harbours where ships touch for refreshment, as well as at those where they unload and take in their cargoes, from inattention to cleanliness and ventilation, acquires a high degree of virulence and contagion*.

* For the truth of these remarks, the author refers to his "Observations on the Diseases in Long Voyages," &c. p. 464.

In this service I made two voyages; and besides the care of the health of the men in the ship I sailed in, I had the charge of several other ships at Bengal in the sickly season of 1768, owing to the great mortality amongst the surgeons; and, in my second voyage, in 1771, I attended also several ships at China, at the request of the commanders or surgeons. From these circumstances, I had a large field for making observations on febrile contagion; of witnessing its limited sphere*, and the powers of cleanliness and ventilation in checking its progress. Both in harbour, and during these voyages, when proper rules of prevention could be carried into execution, contagious diseases never spread. Even a fever patient, taken from the sick birth, and dressed in clean clothes, when carried upon deck, and placed on the leeward, never communicated infection. On the contrary, when, from the decks being lumbered up, or from bad weather, cleanliness, and ventilation, could not be effected, fever and dysentery always became prevalent, till the bad weather changed, and allowed a check to be given to them, by carrying rules of prevention into execution.

In thirty years' practice in this kingdom (twenty-seven of which has been in this place), by following the same rules of prevention, viz. ventilation, cleanliness, placing patients in chambers distinct from the rest of the family, in farm-houses, in the houses of publicans, in the houses of tradesmen, in my

* My attention was struck by the humane and wise conduct of the commander of the *Salisbury*; by anchoring his ship at a little distance from the rest of the fleet, and allowing no intercourse with sickly ships, he preserved his crew in health at Bengal in 1768. See the author's observations, p. 392.

own family, in those of the first rank*, and in boarding-schools, I have never known the contagion spread.

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* In the beginning of January, 1791, a fever of a very malignant nature was introduced into a family, in this neighbourhood, possessing a mansion with spacious apartments. A young lady, and the maid who waited upon her, were the first victims of the disease. About the 17th day of the young lady's confinement, I was sent to consult with two physicians and the surgeon who attended her. The young lady had been treated for water in the brain; the children of the other branches of the family were not only allowed to associate with her for the first week, but actually to lay, at times, upon the same bed.

I found this young lady, at my first visit, in a room extremely offensive, where not a ray of light or the least stream of air, were allowed to enter, labouring under typhus fever, with every symptom of extreme debility: the bed in which she lay was placed in a deep recess, and surrounded with curtains of thick damask; with window curtains of the same. From this house eleven persons received the infection, three of whom died. I was one of those who got the disease from this patient, of which I was sensible at my very first visit, having long and carefully examined her within the bed-curtains, and having become sick in the air which was highly contaminated, before the windows were allowed to be opened.

Three young persons who caught the fever were removed to a relation's house in the neighbourhood, and were attended by three ladies; cleanliness and ventilation were strictly observed, nor did the ladies or any other person in the house receive the infection.

Another collateral branch of the family had two children seized with the fever, after they returned home from their visit, which was prevented from spreading by observing the above means.

A gentleman and his son nearly allied to the same family caught the disease. From the father, whom I attended, no person received the infection; the son did not take ill till he went from home, but, having corresponded with the physician who had the care of him, I can aver that the contagion did not spread.

To satisfy timidity, the fever patients have been sometimes placed in lodgings; but this I never thought necessary, if only one person was seized, when I could depend upon rules of prevention being carried into execution.

Very lately the scarlet fever and sore throat appeared in a large boarding-school in this town. Six young ladies received the infection, probably from the same source. I was called to the first the moment she was taken ill; and I suspected her case would turn out scarlet fever. The young lady, her bedding, and all her clothes, were taken into a separate room; and I gave directions that the same measures should be followed with any other person in the house who might be seized with the slightest feverish symptom. In the course of a few days the remaining five took the disease; one of whom died. My first patient continued in the boarding-school for above a week, the others only a few days, till lodgings out of the house could be procured. By following the rules of prevention, the disease did not spread to any more of the young ladies, or to any other person in the boarding-school, although it contained upwards of fifty.

On other former occasions of the introduction of the low and scarlet fevers into Boarding-Schools by *day scholars*, by similar precautions infection never spread to a second patient. I mention the introduction of contagion by *day scholars* into Boarding-Schools in this town, because such is their cleanliness and neatness, and such is the attention paid to

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I should not have introduced this note, had not I understood that the progress of this fever in those families had been reported in a mutilated form to the special court held on the 24th of June, 1802, and produced as an instance of the uncertainty of preventing the spread of contagion, even in houses with proper accommodation.

the health of the young people, that it is impossible that any contagious disease can be generated in them.

In order to shew that I have not recommended a practice that I do not follow in my own family, and with my most respected friends, I beg leave to mention the following circumstances:—My daughter lodged at a Boarding-School in this town, where one of her young companions was seized with the scarlet fever. I did not take her home, because I knew rules of prevention would be strictly followed. The young lady who sickened was taken out of the house by the gentleman who attended her, and the disease made no further progress.

Dr Currie of Liverpool had two daughters at the school first mentioned. The youngest, Miss L. Currie, was the person who first took the disease: his eldest daughter continued in the house during her illness, and still remains in the same Boarding-School. When Dr Currie was informed of the circumstances, and of the measures that were taken to prevent the spreading of contagion, notwithstanding he had formerly lost a child by the same disease, he was perfectly satisfied, and desired her to continue at school.

Dr Percival too had a daughter at the same school, who went to a gentleman's house in the country, soon after the fever broke out. Miss Percival, at the very time Miss Currie was ill of the fever, came to visit her sister. I gave it as my opinion that she would be as safe at this school as in any house of the town, because I knew that every rule of prevention would be strictly followed. After staying two nights, she went to visit her sister,—and after remaining two days, both returned to the boarding-school. I wrote to Dr Percival

immediately, informing him of every particular. He was perfectly satisfied with the means taken, and his daughters still remain at the Boarding-School. Such facts as these require no comment.

I could here adduce many fatal instances of contagion having been carried home by taking young persons of both sexes from boarding-schools on infection breaking out in them. The practice of dismissing a school (which is so usual in such cases) is most dangerous, for it very generally spreads the disease extensively. Dr Haygarth has written well on this subject, and has shewn with what ease and certainty contagion may be prevented in Boarding-Schools, and in houses with proper accommodations.—See his late LETTER TO DR PERCIVAL, which should be in the possession of every family.

The institution of the Dispensary in 1777, very much enlarged my opportunities of making observations on the means of extinguishing and preventing contagion. For many years the attendance on infectious diseases fell chiefly to my lot. In the houses of the poor, where families occupied two rooms, and who applied early for relief, I found infection mitigated, and its progress prevented by proper medicines, by ventilation, and cleanliness*. But in the crowded and dirty habita-

* A physician of the Dispensary, of engaging manners, and of active benevolence, several years ago caught the contagion from a poor family crowded in a small room, incapable of ventilation. He unfortunately died of the distemper, but communicated the disease to none of his attendants. Three of the apothecaries of the Dispensary, since the commencement of the institution (one of whom died), received, in performing their duties, the most virulent contagion. Although they

tions of the abject poor, in defiance of every exertion, the disease spread; and I could adduce many instances where infection was carried to distant villages: but shall content myself with mentioning the means by which it is commonly conveyed from the poor to other ranks of society.

1st. By servants visiting their relations and acquaintances when confined to their habitations by fever; and often carrying the children of their masters along with them.

2d. By servants buying the clothes of the sick, or of the dead, which seldom receive any complete purification.

3d. By families or servants getting clothes washed, or made up in the houses of the sick.

4th. By poor convalescents coming into shops, and public-

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lived in a small house in the Old Dispensary Entry, none of their attendants took the infection. Two of the apprentices also caught the contagion,—and although they lived with their parents, who had other children, none took the distemper from them. Three pawn-brokers, in different families, were seized with contagious fevers; they communicated the disease to no person, although one of them had a deep mortification, and struggled through the disease with great difficulty. *So powerful are the means of ventilation and cleanliness in rendering contagion innocent.* I attended all the persons abovementioned, and bear testimony that the fevers, in all, were of the most malignant kind. Were it necessary, I could adduce innumerable instances of the same nature, to shew that the most malignant fevers, when introduced into clean houses, containing two or three rooms, seldom spread amongst the family; and by *rules of ventilation, cleanliness, and separation*, the contagion is certainly confined to the person or persons who originally received it.

houses, and into the *narrow out-lets* to our public walks*, with their clothes imbued with contagion.

And 5th. By receiving the poison in a concentrated state by coming in contact with persons issuing out of the highly infected habitations of the poor, *living on ground floors*, in *narrow lanes and courts;* where even the dirty clothes of the sick may be often observed hanging out of a window, or upon a line stretched out of doors†.

No adequate remedy occurred to obviate this evil till a correspondence with Dr Haygarth commenced. His enlarged mind conceived the means of preventing the spreading of the small pox, and successfully proved its practicability by the test of experiment. From that moment I have watched a favourable opportunity of proposing an institution for removing fever patients from their infected habitations to a proper house of reception, and for *cleansing* and *purifying* the infected houses, agreeably to the original plan of the Society at Chester for eradicating the Small-Pox.

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* Lady ——, aged above 70, caught the small-pox from a poor child in the narrowest part of the passage leading from Westgate-street to the Forth. The strong variolous smell made her so sick, that she with great difficulty walked to her lodgings in the Forth. At the usual time the confluent small-pox appeared, and proved fatal on the 11th day.—She informed me that she had often been in rooms with patients under the inoculated small-pox, and therefore supposed she was not susceptible of the disease, till she met this frightful child; she instantly was alarmed to the greatest degree, and told her servant that she would die of the small-pox.

† To the above means of spreading contagious diseases, may be added the waiting-room of the Infirmary; for I have observed persons sitting there amongst the other patients labouring under hooping cough and scarlet fever. Those who come from infected houses with clothes

When the improvement and the extension of the Infirmary of this place had received the sanction of a Special Court, I thought that a fortunate æra had arrived, when this great work of humanity would be effected with ease, and certainly without medical opposition.

I was excessively astonished when I heard objections were offered on the score that the fever house might extend contagion to the Infirmary. Should such an event take place, it is as contrary to the known laws of contagion, as it is contradictory to what all medical men must daily observe in practice. A patient under small pox, scarlet fever, or typhus, is frequently removed from a boarding-school or from a gentleman's family to a lodging house; yet I dare say no physician or surgeon can give an instance of such diseases spreading either through lodging houses or to the neighbourhood, when proper precautions have been used. Some of the gentlemen who now are so alarmed about contagion, seem to have forgotten their former testimony, the result of their experience. In 1791, besides many other medical friends, I addressed the following queries of Dr Haygarth, to all the surgeons of our Infirmary:—

"Did you ever know the small-pox conveyed out of one chamber into another, by a person who certainly did not carry any variolous serum, pus, or scab, on their clothes, hands, feet, &c.?"

The answers from all the surgeons of the Infirmary, after time for deliberation, were in *the negative*.

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impregnated with febrile contagion cannot be detected. But that *out-patients* from this cause very frequently receive infection, and diffuse it in country villages, cannot be doubted.

"On the contrary, have you not known numerous instances of persons and clothes exposed to the miasms of a small-pox chamber, that soon after approached many liable to the distemper, who yet escaped infection?"

The answers given to this query were in the *affirmative;* and with regard to inoculation were similar to the following:—

"I can answer your fifth query, by saying that in my own practice, and at a rough guess, I have inoculated at least four hundred in the last eight years, I never had the least reason to think I communicated any infection from my person or clothes, though I have carried in my pocket a phial containing the matter on lint, and have not changed my dress before I have visited uninfected houses. I have indeed sometimes used that precaution, yet it was but very seldom."—— *See* HAYGARTH, *p.* 68, 69, *and* 404.

Having said that I thought the extension of the Infirmary a favourable opportunity for establishing a house for the general reception of fever, and for the formation of a Board of Health*, allow me a few minutes for explanation.

1st.—One reason for this opinion is, that notwithstanding the liberality of this opulent town has been great in supporting medical charities, yet, it appears to be, in some measure, exhausted by so frequent demands; and from this cause (aggravated by the exigency of the times), the funds of all our charitable establishments are upon the decline: the proposal, therefore, of a *separate* fever establishment would prove abortive.

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* The parishes have shewn a ready disposition to assist the plan.

2d.—If even a fund could be obtained for building a House of Recovery, we should have the same difficulties that have occurred at other places to struggle with, in obtaining a house for the reception of fever patients, from fanciful and groundless fears respecting contagion.

3d.—Because a fever house should be annexed to every Infirmary connected with a large town, in preference to its being placed in any other situations, 'for it is most beneficial to the objects of such a charity, and beyond all comparison best adapted to preserve Infirmaries from infection.'

4th.—Because, by annexing a fever house to an Infirmary, it will be PERMANENT, EFFICIENT, and ECONOMICAL; whereas, if it were made a *separate* institution, as soon as a fever had been for the time subdued, from the great expense attending a household establishment, its funds would be uselessly expended, and the contributions that supported it would be probably withdrawn.

Having submitted to you my experience respecting the practicability and ease of preventing contagion; and having offered arguments for annexing fever-wards, justly called a House of Recovery, to our Infirmary in preference to all other situations, I shall only trespass upon your time a few minutes longer.

A proposition having been made for converting your *House for Fever*, into a convalescent Hospital; and considering the scheme to be fraught with danger and ruin to the funds of the Infirmary, I have presented you with two tabular views of the diseases of the in-patients, in order that you may have documents to form your opinion, and to direct your judgment.

The first table is constructed from my own journals, and contains the admission of *in-patients* for three years; their respective diseases, and the manner in which they were discharged. The second table has been, with great pains and labour, constructed from the Infirmary Register, for the year ending April, 1801*, by Mr Wilkie, on whose skill and accuracy in this business, I can place implicit confidence. From a very slight inspection of these tables, it will appear, that scarce any of the distempers require a convalescent hospital; and that almost all the several diseases, discharged under the title "Relieved," &c. are incurable. An Hospital for the reception of such patients, under such diseases, would strictly be intitled to the name of an ALMS HOUSE. It would record many deaths, but effect few or no cures. It might lessen the *parish rates* at the expense *of private benevolence*, but it would, in a very short time, annihilate the funds of the charity.

But the truth is, the Infirmary, when improved and completed, can stand in no need of such a convalescent Hospital. Every ward, if the house officers and servants perform their duty, will be as sweet and pure as a private room. The Infirmary, too, will enjoy *convalescent galleries and dining rooms*, for the patients; private chambers for bad cases; and every other necessary accommodation.

To you, GENTLEMEN, Members of the HOUSE and BUILDING COMMITTEES, I have many acknowledgements to offer. During a long and laborious investigation, to contribute my mite towards the improvement of the Infirmary, for the heal-

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* No entry of diseases since this time has been made, nor have any monthly returns been constructed.

thy accommodation of patients, and for rendering it more extensively useful to the public, you have listened with attention to my proposals, and adopted whatever appeared to yourselves to be useful, and sanctioned by experience. It has been fortunate for myself; it has been peculiarly fortunate for the institution, that so many of you, who have been acting members of the committees, are men of philosophical minds, of deep research, and endowed with great discretion, combined with firmness and perseverance. Possessed of such talents, you, I mention it with gratitude, have animated my exertions, supported me in difficulties, and often relieved my anxieties concerning the fate of a favourite Institution. To your protection I finally resign it, not doubting that the decision of the SPECIAL COURT, will give existence and stability to a HOUSE of RECOVERY, which is the first and grand step towards forming an INSTITUTION for the CURE and PREVENTION of INFECTIOUS FEVERS—an INSTITUTION calculated to *rescue* the poor, and *secure* all other ranks of society from contagion.

I am,

GENTLEMEN,

With the utmost respect and esteem,

Your faithful humble servant,

JOHN CLARK.

Newcastle, June 16, 1802.

COMMUNICATIONS

RELATIVE TO THE

SAFETY OF OPENING

THE

FEVER-HOUSE of the INFIRMARY.

COMMUNICATIONS, &c.

Extract of a Letter to Dr CLARK *from* W. FALCONAR, M. D. F. R. S. *of Bath.*

" *June* 3, 1802.

"I am *most decidedly* of opinion in favour of your plan of a Fever-hospital. Experience speaks peremptorily in its favour, and renders the encouragement of such a plan a matter of duty rather than of choice. The speculations of the timid or suspicious respecting the possible accumulation of infection, are dissipated by the strong body of evidence that appears on the other side; and indeed, in my opinion, are as futile in theory, as they are proved to be fallacious in practice. I hope then no obstacles will remain to you and your countrymen RAISING TO THEMSELVES A MONUMENT MORE DURABLE *than any* that *party interest* or *prejudice can erect*. I am glad you have made yours a separate building. It will obviate objection and satisfy timidity; though I am confident the sphere of the infection is too confined to spread, were they in the same house with other patients, if the precautions are used, but not otherwise."

Copy of a Letter to James Losh, Esq. from J. Heysham, M. D. Carlisle.

DEAR SIR, *June* 7, 1802.

YOUR brother delivered to me your favour of the 4th inst. with the accompanying papers, which I have attentively perused. If my opinion can add any weight to the respecta-

ble authorities which you are already in possession of, I can, without doubt or hesitation, pronounce that if your proposed excellent plan for appropriating a part of the new building at your Infirmary for the reception of patients labouring under putrid contagious fevers, can be carried into execution, it will essentially contribute to the salubrity of so large and populous a town as Newcastle. The poor who reside in crowded rooms, situated in close confined dirty lanes, are the most liable to be infected with fevers of this kind; and if one in a family, so situated, receive the infection, the first victim, unless he be speedily removed, is very seldom the last. I myself have frequently visited two, three, four, and, in one instance, six patients, all confined at the same time in one room. Where noxious effluvia are so accumulated, and rendered virulent from want of proper ventilation, &c. &c. &c. it not unfrequently happens, that persons in better circumstances, and residing in commodious houses, are seized with the same disorder; but in such cases, we seldom see the contagion communicated to the rest of the family. Three of the apothecaries of our Dispensary received the infection; in all of them the disease was of a very malignant nature; they however recovered, and from them the contagion was not communicated to one person in the respective families in which they resided. As you have received communications on this subject, from such a number of the most intelligent medical practitioners, who all concur in one sentiment, I deem it superfluous to add any thing more respecting the safety and utility of the measure proposed, than sincerely wishing it success.

And am, dear Sir,

Your much obliged humble Servant,

JOHN HEYSHAM.

Extract of a Letter from Dr HAYGARTH, M. D. F. R. S. *&c. &c. to* Dr CLARK.

" *Bath, June 9th,* 1802.

" With great satisfaction I resume our correspondence on the best means of preventing contagious distempers. I have attentively considered the Report of your Committee for promoting an institution for the cure and prevention of contagious fevers at Newcastle. On the whole, I highly approve of your plan.—Three lofty wards, completely ventilated by opposite windows, with a room or two for a single patient occasionally in the garret, will, I trust, afford sufficient accommodation for poor patients ill of infectious fever, even in your large town, if the printed regulations, which I inclose, be accurately observed. You should be very liberal in rewards to the inspectors, and to poor families, when they successfully observe these regulations, so as to preserve the remainder of the family from contagion, after the first has been attacked with the fever. Hence a large Fever-hospital which might admit whole families, without attention to preventive regulations in the dwellings of the poor, would entirely defeat the chief purpose of the institution.

" To allay the superfluous fears of some of the well-meaning Governors of the Infirmary, you have judged it necessary to provide a separate kitchen, and a power to shut up the door of communication, "*at the end of the gallery*," if required. But no intelligent person who pretends to judge for himself, and who is acquainted with the numerous and well authenticated facts discovered at Chester, Manchester, and Liverpool, which prove to what a narrow sphere the contagion of fever is limited, will venture to risk his character by maintaining an opinion that there can be any danger from using a common kitchen, or from a door of communication between the Infirmary and the Fever-wards.

"In all the streets of every large town, especially the narrowest, there are always patients ill of infectious fevers, in small, close, dirty rooms, breathing air so supersaturated with the pestilential poison as to infect twenty-two out of twenty-three persons exposed to it in such habitations. The doors and windows of these rooms are often opened into the streets, within a few feet of all who pass through them. Whereas the Fever-wards are kept so clean, and the contagious poison is so diluted with fresh air, as to render it innoxious even to the nurses who attend upon the patients. No man who pretends to have any apprehension that your house for fever will infect patients in the Infirmary, can, consistently with this opinion, allow his family and friends to walk through the streets of the town."

Copy of a Letter to Dr Clark, from J. Ferriar, M. D. Manchester.

DEAR SIR, *June* 10, 1802.

INCLOSED you have a certificate of the good effects of our fever-wards, which was drawn up at a meeting of the physicians, called in consequence of your letter. I regret that you should encounter any opposition to your benevolent design of establishing a similar institution in Newcastle; but I trust that you will ultimately succeed. The success attending our fever-wards has converted nearly all those who, at the commencement, were induced to counteract us.

The average expenses of each patient to the Charity has varied, in different years, from 1l. 1s. 3d. to 1l. 10s. 3d. *exclusive* of wine and medicines, which are supplied by the In-

firmary. I believe the estimate which is mentioned in my account of the institution is pretty correct—about two guineas per head, including wine and medicines, and the whole expense of the establishment.

I am, dear Sir,
Most truly and affectionately yours,
J. FERRIAR.

CERTIFICATE.

Manchester Infirmary, June 8, 1802.

We, the undersigned, physicians to the Manchester Infirmary and House of Recovery, certify, that we continue to experience the beneficial effects of the plan for removing patients, affected with contagious fevers, from their own houses; and that the number of fever patients in the town, has been considerably lessened in this manner, notwithstanding the influence of unfavourable seasons, and of other causes of distress among the labouring poor.

We likewise certify that, during a period of eight years, since the opening of the House of Recovery, not a single instance has occurred to us in which infection has been propagated from the fever-wards to the neighbouring streets.

THOS PERCIVAL, Physician Extraordinary.
JOHN FERRIAR,
SAM. ARGENT BARDSLEY,
EDWARD HOLME,
} Physicians in Ordinary.

Copy of a Letter to James Losh, Esq. from W. Briggs, M. D. Kendal.

MY DEAR SIR, *June* 10, 1802.

ACCEPT my best thanks for your obliging communication, relative to the establishment of fever-wards at Newcastle. To the host of evidence already so happily adduced, in the Report of your Committee, my feeble suffrage can add little weight; nevertheless, since you have done me the honour to seek it, I will state a few facts, which have come within my own observation, to shew that the distance, to which the power of infection extends through the atmosphere, is very circumscribed. During the late distressful times, this town suffered under the twofold pressure of dearth and a stagnant trade, and consequently our workhouse literally overflowed with poor. Luckily, three commodious apartments, with a separate staircase, had been built some years before, at the suggestion of the late Mr Howard; but their original destination, as fever-wards, had long been lost sight of, and they were as much crowded as any part of the house. It was difficult to contrive how to clean these rooms; and at first only one of them could be spared; and even to effect this, the Committee room was converted into a bed room. By means of this, one apartment for the reception of fever patients, though the typhus was brought into the house repeatedly by new comers, and in some instances broke out, without its being clear whence it originated, it was prevented from spreading. At one time a numerous family arrived from Liverpool, all infected; but not a single individual caught the infection from them. I need scarcely add, that considerable pains were bestowed to enforce the observance of Dr Haygarth's rules. About the same time a malignant fever was brought by a vagrant into a poor lodging house, in a miserable close yard, or Cul de

Sac, and all that took it died, to the number of six or seven; first the vagrant, then the man and woman of the house, and afterwards those that attended them; but except these that went into the infected apartments, and were *much about the sick*, not one of the people who lived in the nearest houses, either adjoining or opposite, were attacked. The alarm was quickly spread through all ranks, and if you will consult the 17th No. of the Reports of the Society for bettering the condition of the poor, you will find some account of the measures taken to extirpate contagion by white-washing. Indeed, in my humble opinion, the question concerning the safety and efficacy of fever-wards, with a view to cut off the sources of contagion, is completely exhausted. It is no longer a matter of argument but of experience. The evidence in your Report goes to prove fully that they *have* been established; that wherever they have been fairly tried, they have answered the ends of their institution, and that in *no one instance* have they been productive of mischief.

That you should meet with opposition from many well-meaning persons, not of the medical profession, who perhaps never directed their attention to such inquiries, is not much to be wondered at. When the House of Recovery at Manchester was first established, several of the most respectable inhabitants, who now, from a conviction of its utility, are among its most liberal supporters, took the alarm, and opposed it with all their might; and, indeed, it must be owned that to the public at large the question was then comparatively new. But even at that time I remember to have expressed my surprise, that there could exist among *medical men* two opinions on the subject; for of late years the laws by which contagions are propagated have been investigated with a degree of success seldom attainable in medical inquiries; and the fever-wards, in the hospitals at Edinburgh and Chester, were standing proofs of the practicability of intro-

ducing similar institutions elsewhere. *Now*, however, that such a blaze of light has been thrown on the subject by physicians of the first character, it is difficult to conceive on what legitimate grounds any farther suspicion can be vindicated. At all events it is incumbent on any medical man, who still withholds his assent, to bring forward facts equally indisputable, and arguments equally strong, on the other side; otherwise his opinion should be of no weight in opposition to evidence, which, while uncontradicted, would be received as conclusive in any court of justice. Accept my best wishes for the success of your plan, which, if adopted, may be the means of saving the lives of thousands; and believe me to be,

Dear Sir,

With sincere esteem,

Your obliged friend,

WM BRIGGS.

I shall be anxious to know the result of the meeting of the 24th, though surely there can be no fear respecting it.

Letter from T. BEDDOES, M. D. *to* DR CLARK.

" Dear Doctor, " *June* 11.

" It gives me very sincere pleasure to find that you are endeavouring to establish a House of Recovery at Newcastle. Every new example must have its effect in rendering these useful institutions general.

" The only objection I have heard, is, that the collection of a number of persons may concentrate and accumulate the contagion, and cause it to spread more,—at least in the vicinity of the fever-wards. Such an idea is very excusable in any person who has had no particular motive or opportunity to look into the subject: But the facts which you have laid together, and of which the authenticity is above all suspicion, must dissipate every such apprehension, where there is a disposition to abide by facts. I can conceive people with an imagination so intractable, as to be incapable of listening to the decisions of experience in a question which so closely touches personal security. Such people are haunted with so wild a terror of febrile contagion, that the idea of studying its laws, with a view to stop its propagation, must appear to them a chimerical and desperate, if not almost an impious undertaking. I know not by what charm you will tranquillise them, while you put them clearly in possession of what has been done in this line.

" Every person must know what wretched managers the generality of the poor are, in good health, and under ordinary circumstances: Every medical man must have seen how much the distress of sickness adds to their helplessness. The relations of a poor person affected by contagious fever, have often reminded me of children heedlessly leaving firebrands in contact with combustible materials, or tossing them about till they had set the house on fire. I look upon it that a House of Recovery, with a hundred patients, where the best ascertained means of prevention are vigilantly practised, stands an infinitely less chance of disseminating the disease than one single infected poor family. I wonder what the number of instances has been, in which, when one member of a poor family has had a contagious disease, others have failed to catch it. I can assure you I saw numbers who had been ill at Bristol, during the last epidemic: I put the ques-

tion; and I did not find any father, mother, son, or daughter, who had had the fever singly. Then how did the first who fell down get his disorder: By an idle call upon some neighbour—by coming in contact with some article of dress or use which had been applied to the sick body—by the neglect of ventilation—of plunging suspicious matters into water—and of those precautions which give security to the attendants in a well-regulated House of Recovery.

"Clifton is as well-situated as a place can be for preserving its inhabitants from contagion: Yet the Bristol fever spread here, as I saw, and proved fatal in some instances, as I was credibly informed.—In cases that fell under my own observation, it began with the servants of opulent families. These servants had had communication with sick houses in the neighbouring city. Now every sick person, removed to a fever-ward, cuts off from servants such an opportunity of carrying disease and death into their masters' houses. Where the fever prevails in any large place without a House of Recovery, you may safely predict that the infection shall be conveyed in this manner into many houses where it would never otherwise come.

"I have traced the continuation of fever from imprudent intercourse, through a succession of years. Others have done the same.

"There is therefore no point of view, in which you will not perceive security to all classes in a Fever-house.

"What extraneous objections may lie against it in any place, I cannot anticipate. Such objections are often the pretexts of indolence, and sometimes of personal aversion. If one of my neighbours could not bear that I should be the

instrument of public good, he would not avow this motive; but he would not want the ingenuity to invent some other, which he could avow.

"The cost attending a scheme of this sort, is, no doubt, an evil: But after proving the efficacy of the scheme, you can only put it to the wealthy,—*Will you be at expense in insuring your ships, your houses, warehouses; and will you refuse to open your purse in behalf of yourself, your wife, your sons, and daughters?*

"With anxiety to learn the result of your efforts, and the most sincere wishes that you may be able to carry your point,

"I am,

"Dear Doctor,

"Yours sincerely,

"THOMAS BEDDOES."

Extract of a Letter to Dr Clark, from J. Walker, M. D. Leeds.

Leeds, June 13, 1802.

ALTHOUGH much labour has been bestowed for many months past to procure ground for erecting fever-wards in this place, every attempt to purchase an open, airy, detached situation, has failed; and, at last, a confined spot of ground in one of the streets, in nearly the centre of the town, has, very injudiciously in my opinion, been chosen for this purpose. I regret the more, because the subscription

already amounts to 1,100l.; and I have no doubt will gradually receive additions, as the necessities of such a charity may require.

The fears respecting the danger of communicating infection from the fever-wards to the adjacent dwellings, have nearly subsided, and would have totally ceased, could we have obtained a situation detached from other buildings; and as the great antidote to febrile contagion is the *free* introduction of *pure air* and *cleanliness*, I am truly sorry the subscribers have not succeeded in their first views,—that of erecting the House of Recovery on an elevated piece of ground on the west side of the town, which is less subjected than any other in this place to frequent contamination from smoke, and the respiration of men and animals, all of which are so unfriendly to such patients as labour under the influence of putridity.

All the contributions hitherto have been raised voluntarily, and not by an assessment of the inhabitants; though the latter was once thought of, if the former had failed.

As little more has been done with us, I have not much to add; and indeed the liberal spirit of inquiry that appears amongst you at Newcastle, and the very wise methods you seem to have adopted, put you in possession of every necessary point that is likely to give stability and success to your undertaking; and that the event may be wholly prosperous is the sincere wish of

J. WALKER.

Extract of a Letter from Mr HUTCHINSON, *House-Surgeon to the Manchester Infirmary, to* Dr CLARK.

"*Manchester, June* 14, 1802.

"It is with much pleasure I begin my answer to the queries of your letter, as every thing I have to relate will tend to support the cause in which you are engaged."

"To give you an idea of the relative situation of the House of Recovery, with the Infirmary, Dispensary, Lunatic Hospital, and adjacent buildings, I have been fortunate enough to procure a plan, formed when the affair was agitated here in 1796; this, with the alterations found necessary to be made, and a rude sketch of the Infirmary premisses adjoined, will, I trust, be more useful than any description I could give you."

"The Fever House, No. I. you will observe, is in a line with the other buildings in Portland-street; the public road is consequently immediately under its window, as much as the flags in Westgate-street are under the windows of the houses in Westgate-street. The road for carriages is *six yards* distant. The House of Recovery, D, is a part of the same institution, and was opened in 1801; its situation, relative to other houses, is precisely the same as Mr Humble the stationer's,—or Mr Rankin the grocer's, in Mosley-street: the lowest story is occupied by convalescents. The Fever-Wards, No. 8, were opened in Nov. 1800; two windows look towards Parker-street, which, on the opposite side, is fully inhabited, having its windows opposite, and nearly parallel to those of the fever-wards; the distance between them is only 18 feet. The Infirmary fever-wards are represented by A; they contain one room for men, and another for women; they are to receive patients from the House of Reco-

very, who require surgical assistance. There being no kitchen or other conveniences to these wards, the intercourse between the patients in them, and the people in the Infirmary, is very frequent. We have had six patients in them at one time since I have been here, yet, in no instance, has contagion been communicated to the Infirmary, or to the Lunatic Hospital."

"The House of Recovery, No. I. is the same as that first instituted; its situation, relative to the Infirmary, you will see in the plan I have sent you; you will also observe the houses, 1, 2, D, have, in succession, so gradually encroached on the prejudices of the people, that the last house instituted, is in as populous a situation as could have been contrived."

N. B. The plan of the Manchester Infirmary, Dispensary, Lunatic Hospital, and House of Recovery, referred to in Mr Hutchinson's letter, —together with several other communications from the most eminent physicians, is now upon the table of the Governor's Hall of the Infirmary, for their inspection and perusal.

Copy of a Letter to Dr Gregory, from Dr Hamilton, Physician to the Royal Infirmary, Edinburgh, inclosed in a Letter to Dr Clark.

Edinburgh, June, 15, 1802.

My Dear Sir,

On a full consideration of the import of our yesterday's conversation respecting the establishment of fever-wards in

the Royal Infirmary of this place, I can, in reply to your queries, do little more than repeat what I have already mentioned to you on different occasions.

It is now many years since the managers of our hospital appointed distinct wards for the reception of patients labouring under fever. My experience bears testimony to the benefit arising from the measure. The peace, the quietness, the airiness and cleanness, which are there easily commanded,—the assiduity and adroitness of experienced nurses, who have no other charge but to minister to such patients, are circumstances which give peculiar facility and success in the treatment of febrile cases, not to be attained when patients of this class are placed promiscuously in other wards, where more bustle and noise unavoidably prevail, and where other avocations would preclude that unremitting watching, so necessary on the part of the nurses, to the comfort and recovery of persons in fever. I speak from comparison; for I practised in our hospital before the present arrangement was made, which, were it now done away, and the former fortuitous distribution of patients substituted, I should, without much hesitation, retire from a duty, in the discharge of which, so circumstanced, I should find little either of comfort or satisfaction.

The communication of contagion from our fever-wards is unknown to me; I do not say that fever does not occasionally take place among the numerous patients received on account of other complaints; but casual and indeed rare instances of this kind can never be mustered up in proof of the existence of a constant and uniformly-acting cause, flowing from a fomes generated in the fever-wards. On the contrary, the quick disappearance of bad symptoms on the admission of febrile patients, the general good health of the nurses

attending in the fever-wards, and of that of the young gentlemen who act as clerks, and who reside in the hospital, evince that this fomes must be weak, if not altogether effeté.

On these facts and observations rests my opinion, that in every hospital, open for the reception of persons in fever, there ought to be appropriate wards, where they may be kept secluded and separated from patients admitted on account of other complaints.

I remain,

Dear Sir,

Yours very truly,

JAMES HAMILTON.

Copy of a Letter to Dr Gregory, from Dr Rutherford, Physician to the Royal Infirmary, Edinburgh, inclosed in a Letter to Dr Clark.

Edinburgh, June 16, 1802.

Dear Sir,

In reply to your question, Whether contagion spreads in febrile diseases in the Infirmary? I can safely answer you that it does not. We frequently have fevers nearly of the same nature in the hospital at the same time; but these have not originated in the hospital, but have been brought into it. As to erysipelatous diseases, these, in like manner, are sometimes brought into the hospital, but do not originate in it, at least not in the physicians' wards. I hardly recollect an instance of their having begun there; but that five or six years ago, when this disease happened to be remarkably prevalent

in the neighbourhood of Edinburgh, two or three affected with it were brought into the House, and several were next day or the following seized with it, obviously by infection. There is one case, and only one, in which I have seen, two or three times, such an infection originate in the hospital; when a cut has been made into an old venereal sore, in a patient at the time loaded with mercury, then indeed there will happen, on many occasions, a very great erysipelatous inflammation, which extends with unusual rapidity, and generally the skin all around, and for a great way, almost certainly mortifies and sloughs off. This is the only species of erysipelas or erythema that I have seen originate in our hospital, except in the case of contagion, from persons labouring under the disease, as above taken notice of, and which is indeed a very rare occurrence.

I am,

Dear Sir,

Your most humble servant,

D. RUTHERFORD.

Extract of a Letter to Dr Clark, from Rt. Cleghorn, M. D. Glasgow.

June 18, 1802.

THAT the contagion of fever might be extirpated to a degree hitherto unknown, seems to me demonstrable from the well-ascertained properties of the contagion itself; from the experience of Europe respecting fever in its most malignant form, viz. the plague; and (if you can overlook an anticlimax) from the facts already established at Manchester, in consequence of fever wards and a board of health. Those

who resist such evidence are either incapable of weighing the arguments, or they are influenced by motives over which, in the first instance, arguments have very little power. The public ought to know, that such motives are very general in our profession; and before a subject which can be judged of by any man of common understanding, be referred implicitly to the decision of medical men, the humane and candid should recollect that Harvey was persecuted by his brethren for years, because he proved the circulation of the blood; that no physician or surgeon above the age of 40, yielded to those arguments and experiments, which are now reckoned demonstrative; and that Sydenham, as he tells us over and over again, otherwise we should not have known it, was loaded with every term of obloquy and reproach, because he maintained cool air and cold drink to be good for patients in fever and small pox. The opposition of medical men, therefore, to any innovation of which the utility seems very obvious, should be considered, not indeed as an absolute proof of its worth, but certainly as no argument against it.

If the public shall not be convinced by the very ample evidence already adduced by you, I fear my testimony will avail nothing. Be this however as it may, I do not hesitate to maintain, that, by proper precautions, fevers might be nearly extirpated, and that no plan seems so proper for this purpose as fever wards or houses properly managed. These never did, and never can, become sources of contagion to infirmaries or neighbourhoods, unless, like the old Hotel de Dieu in Paris, they be constructed on the worst possible plan, or were to be managed entirely by knaves and fools. I believe I told you (tho' perhaps it might be Dr Currie, with whom I had some correspondence on the same subject) that, properly speaking, we have no fever wards here, where, however, no patient with infectious disease has in any instance been rejected. Such are placed in three small rooms, attached to

each ward. These rooms communicate by a passage with the ward itself, and are excellently contrived for ventilation to any degree thought necessary. Nothing is more common than the effect of this pure air, as described by Dr Gregory, on our patients, who feel unspeakable relief from it alone. Now and then the nurse has received infection, and sometimes one, nay I remember in a very bad case, two patients who assisted the nurse, received the infection, but it was instantly checked, and in no instance has fever attacked the contiguous wards, though some precautions which might be taken are sometimes omitted. I have seen a patient in fever, not only carried through the ward, but set down by the fire at the end of it, till the room was got ready; and some of the patients have assisted the nurse to undress and lift the patient, immediately after which they have returned to the ward. By a proper arrangement of fever-wards, even these risks might be avoided, and the chance of accumulating or diffusing contagion diminished almost to nothing.

We are still somewhat behind in purifying the dwellings of the poor, and consequently very shocking events take place, similar to those mentioned by some of your correspondents. For instance; a father, mother, and five children, in fever, lay on one bed. The father died, and remained two hours before any one came near him: at last a gentleman sent some of them to the Infirmary, and had the rest properly treated at home. Instances of this sort must occur in every manufacturing or commercial town, till fever-wards become general.

Though we have no fever-ward in general, whenever the rooms become insufficient, one is instantly opened. This is actually the case at present, and it is attended with the same happy effects as at Edinburgh.

I am sorry it is not now in my power to procure the signature of any of those who attend the Infirmary, as I have no time to lose; but if it be judged necessary, that can be procured at any time. In my opinion it is not worth while, because it will not convince those who have taken their resolution. I am sorry I cannot give you better information;

And am, dear Sir,

Yours sincerely,

RT. CLEGHORN.

Copy of a Letter to James Losh, Esq. from Thos. Creaser, Esq. Surgeon to the Bath City Infirmary.

Bath, June 18, 1802.

My Dear Sir,

I thank you for the communication of the plan of the Newcastle Infirmary, as to the opening a house for the reception of fever patients. After the demonstrations of the vast utility of this measure which have been seen at Manchester and other places, the opinion of an individual, possessing less experience, may be deemed superfluous. I cannot, however, avoid expressing the thorough conviction I feel of the vast importance to the welfare of society of such institutions. By the bills of mortality, and Dr Willan's account of the diseases in London, it will be seen, that fevers, of which the greater number are contagious, exceed very far in frequency any other disease, and that they are in a large ratio to the aggregate of all other diseases. By the results of the trials at Manchester, it appears that they are capable of being diminished to annihilation. I will venture to say, that the concentring of such patients in a single and circumscri-

bed place, even if it did not directly tend to relieve those who would otherwise receive imperfect medical aid, would be found effectually to limit the ravages of fever, by diminishing the points of contagion; that such a situation, although a focus of contagion, is one from which it may be completely stopped in its extension, is proved by universal experience. We have a fever-ward in the Bath City Infirmary, to which I have the honour to be Surgeon; and there has *never been an instance* of the communication of fever from it to any other part of the house. Should an unfounded dread of this kind prevail, a stop may be immediately put to this objection, by observing, that contagion, in the most *circumscribed place*, may be completely decomposed and destroyed by the vapours of nitrous acid, or oxygenated muriatic acid. I mention this, not from any apprehension of the extension of contagion, where common precautions are taken; but if a dread should exist of this kind, and the adoption of so valuable a plan be thereby held in doubt, every scruple may be removed by the use of the chemical agents above mentioned.

Guyton Morveau's Essay on this subject may be consulted. With the most zealous wishes for the success of your intentions,

I remain,

My dear Sir,

Your sincere friend,

THOMAS CREASER.

Copy of a Letter to Dr Gregory, from Mr Russell, Senior Surgeon to the Royal Infirmary, Edinburgh, inclosed in a Letter to Dr Clark.

Edinburgh, June 20th, 1802.

Dear Sir,

IN answer to your queries respecting the state of the hospital gangrene in the Royal Infirmary since I took charge of the hospital in the beginning of January last year, I am happy to inform you, that a very small number of the patients under my care have suffered from the complaint; and that the cases have in general been slight, and of little consequence. It has never appeared under a contagious form, by attacking a number of patients at a time. There has been only one case, in the person of an old man, in which it produced any considerable aggravation of his former distress. In another case, a slight attack of it seemed rather to be attended with beneficial effects, as it destroyed the surface of a bad ulcer, so that the sore which was produced healed immediately after the hospital gangrene was cured. This fortunate termination of hospital gangrene, however, is too singular to be the foundation of any hopes that it will happen frequently.

Upon the whole, the attacks of hospital gangrene, during the period to which I allude, have been so rare and so slight, that I do not regard them as a serious evil.

I am, dear Sir,

Your most obedient servant,

JAMES RUSSELL.

Extract of a second Letter to Dr Clark, from Dr Gregory, Professor of Medicine, Edinburgh.

" THE characters of the two hospital physicians, their means of knowledge, and their information or testimony, appear to me, in every respect, unexceptionable and conclusive. They declare that they have known no evils, but, on the contrary, much and uniform good, from the fever-wards. Nay, if both these physicians had been annihilated two months ago (I mean, before I asked them about the good or evil of those fever-wards), still there would be complete evidence of their good effects in *this hospital*, and the strongest possible *negative* evidence that they have had no bad effects:

" For, first, one fever-ward (the men's) was tried more than 20 years ago. It was found to answer so well, that the physicians were eager to have another fever-ward (for women), and got it accordingly, the very first opportunity, which, however, did not occur for several years; so that they *must* have had complete experience of the *great good*, and no evil, of the first fever-ward. Even the general average of deaths among the patients in this hospital (only 1 in 26) implies irresistibly that no bad fever spread from the fever-wards to other parts of the house.

" Next, negatively: Though the fever-wards have continued now for many years, no complaint of any evil from them has ever been made by any of the ordinary physicians, or of the clinical professors, or of the surgeons who attended *in rotation* in the surgery wards, to the number, I suppose, of 30 or more, within these 25 years; yet all of these practitioners had free access to the managers, both publicly and collectively, and privately and individually; and it cer-

tainly was the duty, and would have been for the honour and interest, of every individual of them, to have informed the managers of any evils which they found to proceed from the fever-wards. Moreover, by the charter of this hospital, the President (or, in his absence, the Vice-President) of the Royal College of Physicians, four other Fellows of the College, two of whom must be Professors of Medicine, the Professor of Anatomy, and at least *two*, but if there be no Professors of Anatomy, then *three* Members of the Corporation (now the Royal College) of Surgeons, that is, at *least*, five physicians and two surgeons, *must* be managers of it. If any evils had resulted from the fever-wards, they *must* have become known to some of these *medical* managers, and *must* by them have been laid before the Board of Managers, —*who could have no other choice or wish*, but either to shut up those wards, or contrive (if this were possible) some way to prevent the evils, while the good was retained which resulted from them.

"If to these *negative* arguments, and the positive testimony of the two hospital physicians, you add the strong experience of the good effects of fever-wards in several other places, and a *just notion* of what a fever-ward *is*, not a receptacle for noxious contagious effluvia, but a contrivance to prevent the accumulation and the virulence of such effluvia, you will have such a mass of evidence as, I think, would satisfy any *jury* in England, composed of twelve plain, sensible, unprejudiced men. I am sure, at least, that it *ought to satisfy* such a jury, or your committee of managers, unless there be laid before them *very strong* and unexceptionable evidence in opposition to it."

Copy of a Letter to Dr Clark, from Gilbert Blane, M.D. F.R.S. and one of the Commissioners of the Sick and Hurt.

London, 24th June, 1802.

Sir,

IT was not till the day before yesterday that I received your letter of the 8th inst. together with several printed documents, respecting the opening of fever-wards at the hospital in Newcastle. It was not, therefore, possible for me to prepare myself to answer your letter sooner than this day; and though it is the day for deciding the question whether that institution be carried into effect, I nevertheless send you my opinion on the points which you have been pleased to propose to my consideration,—trusting, that what I have to suggest may still not be entirely thrown away.

Having been in the constant habit of considering this subject, both in a moral and medical point of view, for the last twenty-three years, partly in the public service, and partly in a great town hospital, to which I was physician for twelve years of that period, I think myself qualified to give an opinion, in so far as close and earnest attention can enable me.

I consider the principal utility of hospitals, as institutions for the alleviation of human misery, to consist in their being asylums for sick destitute strangers (as the word implies), and in being receptacles for preventing the spread of contagion: For as there is a certain limit to charity, beyond which it becomes a premium for vice and idleness, I am by no means of opinion that sickness in general, occurring among the lower orders, should be indiscriminately provided for at hospitals, inasmuch as it militates against that mutual private

dependence and protection, so essential to the existence of society, in point of morals as well as general welfare.

I therefore most clearly and heartily concur with you in recommending, that a large share of the hospital should be set apart for the purpose you mention, as long as the evil exists.

In addition to the forcible reasonings, adduced chiefly from experience, contained in the papers you have transmitted to me, I will beg to present the subject in another point of view, tending farther to recommend the institution in question. From much observation, as well as unquestionable testimony, I am well convinced, that by far the most frequent and most virulent febrile infection does not originate from fevers themselves, so much as from want of ventilation and cleanliness among those in health: What I mean will be best illustrated by an example. In the famous sessions at the Old Bailey, in the year 1750, it is remarkable, that the felons who communicated the contagion were not themselves ill of fever; and it is perhaps still more remarkable, that none of those who were ill of it communicated it *to their families or attendants*. It is not to be inferred from this last part, that these fevers were not infectious, as some have gone the length to say; but that those who are treated in clean and airy apartments, such as these of the better sort of people, who were the victims of that infection, always are in the city, do not communicate infection, even to those who are in the constant habit of approaching them. I have uniformly made the same observation in those naval and civil hospitals which I have had a share in directing; and when some rare and accidental instance of infection occurs, in such circumstances, there is reason to suspect that it has been derived from the original stock of infection, adhering to

the clothes or hair of the patient, and not to that which may be supposed to generate in the course of the fever. And when such fevers occur in the private families in which I attend, I constantly assure the family, without having been once mistaken, that if perfect cleanliness and sweet air are maintained, there is no occasion to fear infection.

I have said above, that the part of the hospital in question should be appropriated to this purpose, as long *as the evil exists*. Those who superintend the police of Newcastle will be fully sensible how far *prevention* is superior to *cure*, and that this fever should be attacked at the fountain head, by some general regulations respecting the habitations of the poor, which, if duly established, would, I am fully convinced, entirely prevent this fever from arising.

About two years ago, an infectious fever arose in some country parishes, about forty miles from London, and proved very fatal, particularly to young people; and having spread to those in the upper ranks in life, a nobleman in the neighbourhood consulted me concerning it: I recommended that parochial visitations should be made, with a view to establish cleanliness and ventilation in the habitations of the poor; to supply them with soap, mops, and brooms; to render the windows moveable, where they were fixed; and to furnish some articles of bed and body clothing; but never to give them money, and only in particular cases articles of subsistance, lest they should be rendered too independent of their own exertions. He has since informed me, that the plan answered perfectly, and has been the means of preventing much misery, and of saving many lives.

The general scheme of the hospital seems extremely well contrived, but there are some ideas respecting ventilation

which I beg to submit. The principal points to be aimed at in this are, I apprehend, 1st, to preserve an issue for the foul air; for if this is done, the fresh air will easily make its way to supply the place of what is exhausted: 2d, to reconcile it with sufficient warmth, so contriving it, that streams of cold air shall not blow on the patients, nor more air be admitted than what is sufficient for a wholesome renewal of it. Both these objects will be attained by making the apertures as high as possible, for the first effluvia of breath and perspiration always ascend; and apertures, in this situation, cannot offend by blowing on the patient, nor can they be readily obstructed. With a view to this, I have known no contrivance, either in ships or hospitals, so essential and well calculated for the purpose, as air trunks over head. Let a square opening, about a foot in dimension, be made in the ceiling of a ward, close to the wall, in a corner; let a trunk be raised from this, and in order to secure a constant draught of air upwards, let it be carried as high as the chimney tops, and let a cone be placed upon it, to traverse with the wind. I will venture to affirm, that no contrivance hitherto thought of, can surpass this, either in safety or effect, unless it is the opening in the ceiling communicating with the chimney, which has been found to answer extremely well in Guy's Hospital; but it applies only to those seasons of the year in which fires are kept.

The hasty manner in which I have been obliged to peruse your inclosures, and the hurry in which I answer this letter, in consequence of yours being so late in coming to hand, prevent me from enlarging, as I could wish, on some of the points in question. I have only to repeat that, with a view to the patients themselves, the advantage of the poor, and the safety of all ranks of society, you have my hearty appro-

bation and best wishes in the proposed scheme respecting the hospital.

I am, Sir,

With high regard,

Your most obedient,

Very humble servant,

GIL. BLANE.

Copy of a Letter to Dr Clark, from R. Willan, M. D. F. A. S. London.

Bloomsbury-square, 24th June, 1802.

Dear Sir,

THE plan of Fever-wards, or a House of Recovery, must be highly requisite for a large, crowded, and extending town like Newcastle. Infectious fevers originate in the close dwellings of the poor, which, in all towns and cities, seem very defective, both in cleanliness and ventilation. From thence, contagion extends to the houses of persons of all ranks, not being, according to the vulgar notion, wafted in the air, but usually conveyed in the clothes of servants (who can seldom be prevented from visiting their sick friends), of washer-women or laundresses, and of occasional labourers, male and female. It is well ascertained, by experience in many places, that if there be no close intercourse among families, the most malignant fever may subsist in one house, without communicating to another adjoining; or even in one chamber of a house, without affecting any inhabitant of the other apartments—an observation I have made a thousand times in the metropolis.

Facts of this nature are now so generally known, that the merchants of Newcastle can judge, as well as medical men, both of the utility and perfect security in the plan proposed.

Whatever opposition may arise to the execution of it, be assured that truth and philosophy will eventually prevail against ignorance and prejudice. We had several objections and obstacles to the House of Recovery established in London, partly from prejudice, partly from selfish motives in some medical practitioners; however, those difficulties have been surmounted, and the articles on which an indictment was laid against the house as a nuisance, or as dangerous to the neighbourhood, were (after more than a year had passed without any occurrence that could be so construed) rejected by the Grand Jury as wholly frivolous, and the presentation thrown out.

The opinion of several physicians of experience and information, constituting the medical committee of the fever institution here, has been published.

This report, which Dr Garthshore informs me he has sent to you, may perhaps afford satisfaction to many.—With best wishes for your success in a most useful and truly benevolent undertaking,

I remain yours,

R. WILLAN.

The note with which you favoured me did not come to hand till yesterday.

Card to Dr Clark, from M. Garthshore, M. D. F. R. S.

" DR GARTHSHORE returns his respectful compliments to Dr Clark: He did not receive the packet till yesterday: He read Dr Clark's letter to the members of the general committee of the institution for the cure and prevention of contagious fevers in the metropolis, and, by their desire, he sends the inclosed testimony, signed by eight physicians, to recommend, approve of, and to satisfy the minds of the public, as to the utility and safety of Houses of Recovery. The committee are farther of opinion, that the opening of distinct fever-wards, in any hospital or workhouse, under proper regulations, is not only *safe*, but *salutary* to the other patients, by separating them entirely, and precluding the chance of infection.

" A prosecution, actually commenced against our House of Recovery, has been completely quashed; and, in addition to the report now sent, Dr Garthshore hopes, in a few weeks, to send Dr Clark a full and accurate recommendatory publication, printed at the society's expense, written by Dr Stanger.

" Dr Garthshore wishes Dr Clark health, prosperity, and much success to all his benevolent and salutary plans.

" M. GARTHSHORE."

" *Board of the Fever Institution,*
Hatchard's, Piccadilly, Friday,
June 25, 1802."

The Report and Testimony of the Medical Committee of the Institution in the Metropolis, transmitted by Dr Garthshore.

FROM the experience of Chester, Manchester, Waterford, and other places where houses for the reception of persons in fever have been established, we are satisfied that the number of contagious fevers has been greatly diminished, not only in towns, but in the very district and neighbourhood, where Houses of Recovery have been situated. From this circumstance, therefore, as well as from our own knowledge, and the statement of those who have the best means of observation, we are of opinion, that, the proper and necessary regulations for the internal management of the house in Gray's-Inn-Lane-Road being adopted, there will be no reasonable ground of apprehension on the part of the neighbouring inhabitants. On the contrary, we believe that there will be much less danger of the atmosphere in that neighbourhood being infected by the proposed House of Recovery, than there now is in the populous districts of the town, from the prevalence of fever in workhouses, or in the habitations of the poor.

At the same time, we cannot help suggesting to the Committee, that the present establishment will not, in itself, be adequate to the general relief of our extensive metropolis, although the measure is, in our opinion, of the utmost importance and necessity, and is imperiously called for by the present situation of this great city; yet we conceive that it cannot be effectually carried into execution without the assistance of Government, in aid of private donations, and of such parochial contributions as the good sense, or particular circumstances, of some parishes may induce them to supply. In a national as well as municipal view,

there is hardly any object of more consequence, or which ought, in our opinion, to be more generally the concern of all ranks of people,—of the rich as well as the poor, —than the adoption of measures for checking the progress of infectious fever, so as to prevent its diffusing itself from unknown and unexamined sources, and spreading desolation through the whole town, and thereby unavoidably affecting many parts of the kingdom at large. The preservatives against this calamity are now generally and practically known; experience has afforded the most unequivocal and satisfactory evidence in their favour; and while other places within the British isles, with far more limited resources, have successfully adopted means of remedy and prevention against this evil, we cannot but express our confident hope that the opulent cities of London and Westminster will not be backward in imitating so wise and so benevolent an example.

J. COOKE.
ROBERT WILLAN.
C. STANGER.
T. A. MURRAY.
W. FARQUHAR.
M. GARTHSHORE.
J. LATHAM.
JOHN COAKLEY LETTSOM.

Copy of a Letter to Dr Clark, from Dr Baillie, London.

June 25, 1802.

Dear Sir,

I only received your plan and note on the evening of the 23d of June, otherwise I should have sent you an answer sooner. A distinct ward, or what is still better, a distinct

house, to receive fevers, is certainly attended with many great advantages. The spreading of contagion among the lower orders of society, and ultimately among society at large, will be very much checked by such an institution. Patients labouring under other diseases are not exposed either to the danger of contagion, or to the disadvantage of being very near patients affected by fever, even if the contagion should not be communicated to them. Patients in the fever-ward or fever-house will be attended by nurses, who will be much more adroit in their business, and will give them more assistance; and physicians will have a better opportunity of comparing the great variety of symptoms in fevers of different individuals, so as to become more thoroughly acquainted with the disease, together with the mode of treating it. While the advantages of this institution are very great, I can perceive no disadvantage whatever attending it. The contagion of fever is not so subtile as to be conveyed by the clothes of the physician or apothecary, who may be attending patients in the fever-house, when exposed to the influence of the air and wind, which must unavoidably take place in the exercise of their profession. I am persuaded, therefore, that a distinct ward or house for receiving patients affected with fever, will make a part of every new establishment of an hospital in this country.

I remain,

Dear Sir,

With esteem,

Your most obedient humble servant,

M. BAILLIE

Extract of a Letter to Thomas Bigge, Esq. from George Williams, M. D. F. L. S. Regius Professor of Botany in the University of Oxford.

June 25, 1802.

Dear Sir,

"I am sorry my answer to your very interesting letter will not afford any substantial aid to the purpose you have in view. Yet allow me to add, both as a medical man, and as a friend to humanity, the tribute of my commendation to your zeal in such a cause.

"As to the evidence contained in the report of your committee, surely no rational scepticism can withstand the force of it. And I am much obliged to you for sending me an abstract so well digested, in which our present opinions, as to the nature of contagion, and the indisputable advantages of fever-wards, are so satisfactorily stated. Could we, in this place, have given you any original authority on these subjects, I should have had great pleasure in adding to the testimonies you have already collected. They however need no additional support; I can safely answer for my medical friends here, that if the population and circumstances of Oxford required such a measure, they would readily concur in the plan you are now adopting, from their full conviction of its advantage to patients under fever, and its safety with respect to the spreading of contagion.

"If you can spare me hereafter a copy of your proceedings in the completion of your scheme, I shall have much satisfaction in possessing such a document: Even here, at some future time, it might prove of great utility to us in relieving ourselves from evils to which at present we are scarcely liable."

Report of the Regimental Hospital of the 4th Regiment of Dragoons, Vine-Lane, Newcastle.

July 1, 1802.

THE regimental hospital of the 4th (or Queen's own) regiment of dragoons, in Vine-Lane, Newcastle, containing twenty beds, was opened for the reception of patients, Dec. 16, 1801.

At that time a typhus fever, of a bad kind, was prevalent in town (at least among the soldiers), on account of which, one good airy room was set apart for the reception of fevers only; there was only the staircase between it and the entrance into the other wards.

There have been six patients, at one time, in the fever-ward, all extremely ill, and the other wards, at the same time, completely full, with venereal complaints, kicked shins, and other accidents; yet I can, with great truth, assert, that since the above period, till the present time, there was not one man in any of the other wards, seized with any symptom of fever.

At Manchester, Birmingham, Ipswich, Stamford, and Nottingham, I followed the same plan, and do not recollect one instance of a patient in any other part of the hospital receiving infection from the fever-ward.

Extract of a Letter to Dr Clark, from Dr Wardell, Physician to the Army.

" *Alnwick, July* 3, 1802.

" Dear Sir,

" I return you many thanks for the papers you have this day favoured me with respecting the proposed annexation of a fever-house to the Newcastle Infirmary. The good effects of such institutions are now almost universally acknowledged by professional men who have paid suitable attention to the subject, and whose scale of practice has been extensive enough to enable them to appreciate their value.

" So numerous and so weighty are the authorities, and no less so the facts and arguments by which the plan proposed is supported, that those of the governors who are not convinced by them would, I verily believe, continue sceptical, though one rose from the dead to bear testimony in its favour.

" I was early led to think the influence of contagious matter producing fever was confined within narrow bounds, and I as soon thought I perceived the importance of cleanliness and ventilation in preventing its generation, and, when existing, in weakening its power, if not immediately destroying it; but from the situations I have held in the army these last nine years, I have had the most ample opportunity of satisfying myself on these points, and confirming the observations and deductions of Dr Haygarth and other eminent physicians on the subject. " By the knowledge of the present day," says Dr Rollo, " contagion can only arise or spread under absolute inattention and neglect." I could, in almost innumerable instances, shew, that in hospitals, even in such temporary incommodious buildings as an army is often compelled to take

up with for regimental ones, when properly conducted fever cases have been admitted with perfect security to the other patients in the hospital, and this so invariably, that for some years past no hesitation whatever has been entertained on the admission of them. I could likewise shew, that in many instances (and I know of no one to the contrary), by strict attention to personal cleanliness, ventilation, and fumigation of the barrack-rooms, the fomes of fever of malignant character have been almost instantly extinguished. This was the case with the 31st regiment of foot, the 14th light dragoons, and the 2d battalion of the 52d foot; the two former were at the time in the barracks at Canterbury, and the latter at Ashford.

"In respect to the limited influence of febrile contagion, and the safety of admitting patients affected with it into hospitals where there are patients labouring under other disorders, I beg to observe, that during the prevalence of the fevers in the regiments already spoken of, there did not occur one instance of the communication of fever in the respective hospitals, while the fever patients were accommodated in separate wards.

"In times of sickness like those I have mentioned, we often found great difficulty in procuring proper accommodation for the sick soldiers, and perhaps in no place do greater apprehensions prevail, than in Canterbury. The clergy there, supported by a few alarmists of the faculty, had almost shut every door against us, and all reasoning and remonstrance were in vain, till I referred them to a matter subjected to their own observation or personal inquiry to ascertain the truth of. At the time I allude to, there were three temporary hospitals in Canterbury—they were hired dwelling-

houses, situated in the public streets, and in contact with inhabited houses on each side; two of these had been employed for regimental hospitals not less than six or seven years, and the other about four. I do not recollect that any one of them was, for any time together, exempt from cases of fever, that is, into which patients labouring under fever were not admitted; it too often indeed happened, from bad conduct in the barracks, that there were many cases of fever in each, yet never in a single instance was a fever, or indeed any contagious febrile complaint, communicated to the inhabitants of the adjoining houses. This was a matter keenly looked into; and glad, I believe, the inquirers would have been, could they have detected a single instance, even of an ambiguous nature, to support their opposition and their prejudices—but the fact was incontrovertable."

Copy of a Letter to Dr Clark, from Dr Lind.

Haslar, 13th July, 1802.

Sir,

I fully concur with you in the utility of the proposed institution at Newcastle, for the reception of the poor in contagious diseases, and in the safety with which, to avoid the expense of a separate establishment, it might be made an appendage to your Infirmary, provided regulations be properly enforced to prevent intercourse between the different wards, and intermixture of clothes and bedding. In Haslar hospital, where, during war, the number of contagious diseases is greater than can be expected in any private institution, the fever-wards are, in each wing, connected by a piazza to the rest of the hospital, and employ, without inconvenience, the common kitchen, wash-house, and other offices.

Observation does not warrant the apprehension that contagion might be communicated to the infirmary, from the windows of the fever-wards, through the medium of the external air; with due ventilation and cleanliness, contagion would seldom be considerable in these wards, and in the free air, beyond very confined limits, even strong contagion would lose its power of exciting disease.

A remarkable proof of this occurred during my attendance on Forton prison in 1780. In March and April, near 3000 prisoners were received at Forton, 1769 Spaniards and 1206 French, and in successive detachments most of them fowarded to other prisons. Forton, in the mean time, became sickly; for above three weeks it was very crowded; afterwards the number of prisoners was reduced to nearly 800 Spanish, and 200 French.

The Spanish prisoners brought with them a typhus fever, which, during the crowded state of Forton, spread both in the prison and hospital. The contagion was so strong, that, at the expiration of ten days, of 27 of the Spanish prisoners employed to attend their sick, only one had escaped the fever; out of 23 nurses and labourers, 22 were either sick or dead; the barber and four interpreters, in succession, there being only one interpreter allowed at a time upon the books. The contagion continued seventeen weeks, and absorbed among the Spanish all other diseases. During that period, 785 Spaniards were admitted into the hospital, including re-admissions, and 156 died.

The French were confined in the same general prison with the Spanish, were lodged at night in separate wards, but used through the day the same common airing ground, kitchen, and offices. From a national aversion, the Spaniards would not permit a Frenchman to associate with them.

Thus situated, the French, in a great measure, escaped the contagion; few of them had fevers, and the fevers of those few were in general slight. During the whole period of the contagion, only 5 French prisoners died.

At the same time 229 Americans were confined in another part of Forton prison; they were not allowed any intercourse with the other prisoners, but the hospital which contained the sick Spaniards ranged along one side of their airing ground, separated only by a narrow cartway, and had near the ceiling of each ward ventilators, opening towards their airing ground. These Americans remained perfectly free from contagion; not one American died during the four months, in which the contagion prevailed so severely among the Spaniards.

It will give me satisfaction to learn that your exertions in favour of the institution are crowned with the success they merit.

I am,

Sir,

Yours sincerely,

JOHN LIND.

Extract of a Letter to Dr Clark, from Wm Saunders, M. D. Physician to Guy's Hospital.

London, July 13, 1802.

"I feel much obliged by your transmitting to me your letter to the members of the weekly committee, &c, &c. together with the opinions of Drs Haygarth, Falconer, and

Percival, on the very important subject of checking the contagion of animal and febrile poisons. After having been a physician to a large hospital for upwards of 30 years, the result of my experience accords so well with the opinion expressed by you, in your correspondence with the governors of your hospital, and as likewise explained by the letters of my medical friends above mentioned, that I have really nothing farther to add, than to assure you, as so much benevolence and philanthropy are indicated by your conduct, that the success of your plan has my most cordial wishes; and if I could in its execution give it any assistance, I should be particularly happy.

"Professional gentlemen, who at the risk of their own lives, destroy or insolate contagion, should meet with a grateful return from the public. A Dispensary physician, who visits the dirty, confined habitations of the poor, is always in danger; while the same attention, in an airy, well-ventilated atmosphere, is accompanied with little or no danger."

Extract of a Letter to Dr Clark, from G. Pearson, M. D. F. R. S.

London, July 13, 1802.

"THAT infectious fevers may be admitted into any hospital, with perfect safety to the other patients, where there are wards appropriated exclusively for the reception of such diseases, and where ventilation and cleanliness are duly attended to, is a matter established beyond a doubt. A distinct building is by no means necessary to prevent to the dissemination of infectious matter; for the contagion of fever, when diffused or dissolved in the air, does not excite disease, even at a small distance. The only mode, I apprehend, in which contagion is conveyed from one place to another is, by the

sick person himself, when recovering, or by portions of infectious matter adhering to bedding, clothes, furniture, &c.

"Patients, labouring under contagious fevers, do not appear to have their diseases augmented by the application of fresh infectious matter; nor is the virulence of contagion increased by placing, in a well-ventilated ward, a number of persons ill of fevers.

"The less intercourse patients in fevers have with others, and the less communication they have with articles of furniture, clothes, bedding, &c. the fewer sources of infection will exist; the advantages of separation, on this account, are obvious."

SOCIETY FOR BETTERING THE CONDITION OF THE POOR.

At a Meeting of the Committee, July 13th, 1802,

PRESENT,

THOMAS BERNARD, Esq. in the Chair.
Sir WALTER FARQUHAR, Bart.
PATRICK COLQUHOUN, Esq.
Dr GARTHSHORE.
WM KNOX, Esq.

"The Chairman laid before the Committee Dr Clark's Report as to the Fever Institution at Newcastle and Gateshead.

"*Resolved unanimously*, That the Thanks of this Committee be given to Dr Clark, and to the other friends of the Fever Institution at Newcastle and Gateshead, for their benevolent exertions upon this important subject.

"ROBT. GILLAM, Sec."

PAPERS

ADDRESSED TO THE

GOVERNORS of the INFIRMARY,

Previous to the Special Court held on the 24th June, 1802,

ON THE PROPOSITION FOR OPENING THEIR

FEVER-HOUSE

FOR THE GENERAL RECEPTION OF

FEVER CASES.

PAPERS, &c.

A LETTER TO THE GOVERNORS OF THE INFIRMARY.

Newcastle upon Tyne, June 10, 1802.

A SPECIAL COURT is to be held at the INFIRMARY, on Thursday the 24th of June, on a subject extremely interesting to the community.

In consequence of the resolution of a SPECIAL COURT, held August 4, 1801, an airy, spacious fever-house has been constructed, separated from the other part of the new building by a strong brick wall, having its own staircase to the north; with a kitchen, bath-room, and every requisite convenience, totally distinct from the rest of the Infirmary. This house, it appears, is capable of containing, not only all cases of fever that are likely to occur in the Infirmary, but all cases that would require removal from any part of Newcastle, Gateshead, and the vicinity: And the question for the determination of the Governors is simply this—"Whether the supernumerary fever-wards in that house (*i. e.* those which never can, on any calculation, be wanted for fevers accidentally occurring in the Infirmary) shall be appropriated to the reception of fever cases from the town and its immediate neighbourhood?"

Now, if the fever-house, from its size, is adequate to the suppression of this fatal and prevalent disease in this populous district, from whence its extensive dissemination is certain, it will require little argument to prove that it will be more useful to apply it to that purpose than to any other, because it is an admitted fact, that the evils inflicted on society by diseases of contagion greatly outweigh the evils inflicted on it by accidents, or by diseases not infectious.

For let us examine the question, even upon the inadmissible supposition that all medical and surgical cases whatever are curable, except fevers. The expediency of fever-wards, and the propriety of opening them generally to fevers in preference to other complaints, would still be evident, from the great degree of incurable evil prevented by removing the contagious person, and by immediately purifying his own unventilated and crowded apartment. The degree of evil thus prevented is matter of calculation resulting from accurate medical returns.

But the above argument for the introduction of fever cases is founded on a statement perfectly inadmissible. The truth is, that fever cases, treated in a commodious ward, have as good a chance of cure as other hospital cases*: And it then follows, that the effects of cure being equal as far as respects the patients, society is a gainer in proportion to the number of fever cases, and of diseases consequent upon fever, thereby prevented. But the effects of cure performed in an Infirmary upon a fever patient and any other patient, are by no means equal, even as far as respects the patients only; for a person in a bad fever gains more by being cured *out* of his own apartment, than a person labouring under any complaint, not infectious, can do. What does he in fact gain? The security of his family; two or three of whom, on the most moderate calculation, would have received the contagion.

Thus common sense, humanity, a regard for others and for ourselves, strongly plead for the admission of fever a-

* The proportion of deaths by fever in the fever-wards of the Royal Hospital at Edinburgh is *one* in *fifteen*.

tients into fever-wards, in preference to any other description of patients; and no Governor can hesitate to vote for their admission, if he be convinced that the occupation of these wards by fever patients is a measure unattended with danger to the rest of the house.

On this very important but very clear point, it seems impossible that there should not be the most complete concurrence of opinion among the physicians and surgeons of the Infirmary; because, if any of them had apprehended danger from the fever-house, he would, as a member of the Building Committee, undoubtedly, from a sense of duty, have stated his opinion of the danger before the plan was finally resolved upon. A fever-house was projected for fevers of accidental occurrence. It must have been generally understood by the Faculty, that a fever-house, originally designed to hold 12 beds (but now able to contain 20), had a more extended object. The contrary supposition is absurd. No objection being then urged, their assent to the plan and purposes of the building is unquestionably implied. And what can be more illiberal and unjust, than to suppose any of them capable, after an implied concurrence, of bringing forward objections just at the moment when the fever-house is actually ready to become the instrument of general good?

The writer of this letter flatters himself that, should unforeseen opposition arise to the application of this fever-house, no blame can be attached to the acting part of the Committee by which it was built, when it is remembered that they proceeded upon the authority of a Special Court, and had moreover the strong reasons stated above for inferring the concurrence of all the Faculty in the safety and propriety of the measure.

But there are other and most conclusive reasons, which render it impossible that any of the Faculty should hold an opinion that the fever-house will produce danger to the Infirmary. The subject of contagion is no longer a disputed point. The range of its influence has been ascertained by observations, which it is now too late to question. Its powers and limits, the means by which it is rendered either virulent or innoxious, are so thoroughly understood*, that a medical man, controverting the conclusions on this adjudged point, would resemble an astronomer who should again bring into debate the admitted proofs of the planetary system.

Were those conclusions, however, to be questioned, the Governors would at least require that, in support of such doubts, there should be laid before them *a digested body of facts and of authorities, and an accurate deduction from both, according to the* ESTABLISHED LAWS OF EVIDENCE.

In that case it would be our duty to investigate the adduced facts and inferences with rigid impartiality. No man, acting from scrupulous motives, will object to reviewing the grounds of his own conviction, when new arguments are offered in opposition to it: He will applaud and

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* "*It has been ascertained that cleanliness, ventilation, and the separation of the sick from those that are well, are certain preventives both against the generation and diffusion of contagion: that the most malignant fever does not render the atmosphere infectious farther than a few feet from the patient, or from the contagion preserved in his clothes, furniture, &c.; and that a person must remain a considerable time within the sphere of infection to receive it.*"—See Proceedings for promoting an Institution for the Cure and Prevention of Contagious Fevers, p. 18.

entreat discussion, because it is friendly to truth, and because it is particularly important in cases where the consequences of wrong judgment might be detrimental to society.

A Governor who is convinced that the opening of the fever-wards will not be attended with danger to the Infirmary, must, from every consideration of public and private good, be determined in favour of that measure. It is, however, possible, that an objection may be started against it, from its supposed infraction of a standing rule, from its being a departure from the original spirit of the institution, and from its extending an undue preference to cases purely medical.

1st.—"*As to the supposed infraction of a standing rule against the admission of contagious diseases,*" it is answered, that the wise rule in question is respected by none more than by the friends of the fever-wards; and that it ought never to be rescinded, accomplishing, as it does, its only object, the exclusion of known fever cases from the common wards of the Infirmary. But can this rule, by any fair construction, be brought to prohibit their admission into the separate house annexed to the new building? Can it be insinuated that the Governors, when, at their Special Court, August 4, 1801, they ordered the building of a large house for fever, proscribed at the same time, by a direct rule, the admission of fevers into the house built for that specific purpose? The Governors can hardly be suspected of meriting so complimentary an insinuation.

That this excellent old rule can only be understood in the limited sense here given to it, is evident from the respectable authority, the authority of the physicians and surgeons of the Charity; who, in the 3d axiom for the regulation of their professional conduct, state that "INFECTIOUS DIS-

DISEASES, *such as those which in a peculiar manner corrupt the air, or, by* SPECIFIC CONTAGION, *spread their baneful influence amongst other patients, should not be admitted on any account,* UNLESS WHERE THERE ARE WARDS APPROPRIATED TO THE RECEPTION OF SUCH DISEASES." They have no objection, no medical objection, to the admission of CONTAGIOUS DISEASES; they only require *wards* appropriated to their reception.

2dly.—"*Its supposed departure from the spirit of the original institution.*" It is not easy to ascertain the precise motives of each of the original institutors, nor is it important. We have an obvious line of conduct—to act from the best motives ourselves. The founders of the Infirmary might be desirous only of relieving the miseries of the SICK and LAME POOR*, or merely of establishing a surgical school. The first seems the best reason for their conduct; and it is fair to believe it was the real reason. The improvement of professional skill followed, as a consequence. But where is the dreaded departure from the spirit of the original institution? Shall we depart from that spirit, by augmenting, in the most effectual way possible, the means of relieving the miseries of the poor? Shall we depart from the spirit of the original institution, by opening a house capable of PREVENTING many of the disorders which that institution was founded to *relieve* †?

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* In the 1st and 2d editions of the statutes, the title of the charity is, An Infirmary for the sick and lame poor: and the statutes and rules are simply transcripts from those of the LONDON HOSPITALS, *which hospitals now begin to open wards for the reception of contagious fevers.*

† Palsies, dropsies, visceral obstructions, scrophulous ulcers, and a multitude of other diseases, are known to be brought on by contagi-

3dly.—"*It will extend an undue preference to cases purely medical.*" If an objection to this effect were seriously urged, it could not be too severely scrutinised. But it cannot be urged; particularly, by the surgeons of the Infirmary, because *they* will, in consequence of the improvement and extension of the building, have much better accommodations than formerly for the cases of their profession. If the suppression of fever, by means of the fever-house, should reduce the number of those cases, they are men of too much humanity not to share in the joy that must be felt on the proof of so happy a circumstance.

These objections being disposed of, it may still be asked, if contagion is so prevalent an evil, will not the parishes of Newcastle and Gateshead hire or build a House of Recovery, either in the centre of the town or attached to the Dispensary? The answer to this is obvious and satisfactory. In the first place, it is a matter of fact that the parishes have no intention whatever of taking those steps; and therefore unless a House of Recovery is opened by the Infirmary, it will not be opened at all. But if one is opened by the Infirmary, the parishes, no doubt, will be ready to pay the full expenses attending the cure of their patients received into it. The proposition is reasonable; and it is equally reasonable that the Governors of the Infirmary should accede to it, because they cannot in any other way make nearly so good a use of their Fever-house; and because their charity will be eventually benefited by the measure. Cordiality and co-operation cannot but take place. The interests of the parishes and of the Governors of the two charities are strictly allied.

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ous fevers. Let the visitors of the Infirmary, the medical gentlemen, and proper returns be referred to,—it will appear from such evidence, that these diseases are rarely radically cured.

In the present case, there is no room for apprehending the operations of jealousy and selfishness, which so often obstruct public good.

In the next place, if the parishes were to take the whole upon themselves, the very expenses attending the measure would prevent its duration. *A Fever-house to be effectual must be permanent.* Is it probable that the parishes, after their Fever-house had subdued contagion, which there is reason to conclude it would very soon effect, would continue a burthensome annual establishment of an apothecary, matron, servants, &c.? Is it not more probable that when the evil was removed, the establishment would be discontinued from its real expense, and its appearing to be no longer wanted? And is it not almost certain that, unless a great change takes place in the dwellings and habits of the poor, contagion would again break out with little prospect of its ravages being permanently prevented? No person who has attended vestry meetings will take upon him to assert, that five parishes will be easily brought to concur in perpetuating a considerable annual rate for the sake of preventing that which, when once subdued, they may not think very likely soon to recur.

The measure of annexing a Fever-house to the Dispensary, is liable to the difficulty of its having no house establishment. But there are others; and supposing that a house, or ground for building a house, could be obtained for that purpose, no medical authority will be found to recommend *that* situation as adapted from its *salubrity* to a House of Recovery from fever. But what situation is there more free from the common objections of popular prejudice, or more convenient for the attendance of the Faculty, than that on which the new Fever-house has been erected?

From this short statement it will be seen, that the question to be decided by the Governors on the 24th of June, is in truth the most interesting and important that has ever been submitted to their consideration. And on no question can they hope to be determined by a more ample and satisfactory body of evidence than that which is contained in the late REPORT OF THE COMMITTEE* FOR PROMOTING AN INSTITUTION FOR THE CURE AND PREVENTION OF CONTAGIOUS FEVERS, and which strictly applies to this subject. No doubt, the rest of the Faculty could add to the irresistible facts and conclusive arguments adduced by Dr Clark as a member of that committee. But the task may be spared them. To add is unnecessary,—to detract is impossible.

Let us then not fail to meet on the 24th of June, solemnly impressed with the importance of the pleasing duty we have to perform.

If we have ever witnessed the miseries which this Fever-house is designed to prevent: if ever having lost a friend, a relative, a beloved child, by contagion, we can estimate the sting of such calamities, and feel for the anguish of others; if we are surrounded by dear objects, on some of whom unsubdued infection may at no great distance of time breathe

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* The following gentlemen were elected members of this Committee, and with the exception of two, whose names are in italics, are Governors of the Infirmary:—Rev. Dr PROSSER, CHAIRMAN; Wm Hargrave, Esq. Isaac Cookson, Esq. Mr Lloyd, Mr Lawton, Mr John Anderson, *Mr Leighton*, Nathaniel Clayton, Esq. T. E. Headlam, Esq. R. Atkinson, Esq. Mr J. Langlands, Mr Harvey, Dr Clark, Mr John Atkinson, Mr Ormston, Mr Barras, *Mr Doubleday*.

its poison, let us be anxious to extend the good in our power, to fence off an impending evil, and to give protection to those who have a right to claim it at our hands.

The populous classes of the community, now continually exposed to contagion, implore the interposition of our charity. Let them not call in vain for rescue from the worst of human calamities, when a remedy, safe, practicable, and efficient is in our power.

Medical men, of the greatest talents and experience, in *every** part of the island, who have established successful Fever-wards, or are anxious for their institution in populous towns where they do not yet exist, informed of the important question before us, await the result with confidence in the wisdom and humanity of our decision.

In short, if we are open to the influence of medical facts established by the concurrent evidence of the most experienced Physicians; if we are actuated by the desire of saving valuable lives in *every* rank of life, and of preventing a multitude of miserable diseases, which, without benefit to the patient, now waste the funds of our impoverished institution, we shall necessarily consider the opening of a Fever-house, not only called for by reason and humanity, but by the strictest regard for the interests and the spirit of the original establishment.

In determining this question, let us not be terrified by *unproved* apprehensions. Those who are alarmed by false

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* London, Edinburgh, Glasgow, Bath, Bristol, Liverpool, Manchester, Leeds, Norwich, Carlisle, Durham, &c. &c. &c. &c. &c.

fears, are too often the victims of real danger. If we reject the proposed plan, be it remembered, that we confirm our own insecurity, and inevitably seal the doom of multitudes. We consign thousands of our fellow-creatures to beggary, to wretchedness, to disease, and death. We negative a measure demonstrably capable of producing *by far the most unequivocal, efficient, and extensive benefits* WITHIN THE WHOLE RANGE OF MEDICAL ASSISTANCE. This is not the colouring of fancy. Examine facts and authorities, and you will find it to be the sober language of truth*.

A GOVERNOR.

AN ADDRESS TO THE GOVERNORS OF THE NEWCASTLE INFIRMARY.

Newcastle, 14th June, 1802.

YOU have lately been presented with two, in my opinion, very delusive reports: one giving you a comparative view of the success of the practice in the Newcastle Infirmary, with that of some other Infirmaries, from which you were led to make a great extension of the building (1); the other presenting arguments, supposed to be in favour of a proposal to you, to give up a part of this extension of the building for the ge-

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* In LONDON, according to the bills of mortality for ten years, ending with the year 1799, the ravages of fever exceed those of the small pox.—*See* BEDDOES' HYGEIA, *No.* 7.

(1) See Dr Clark's circular letter—supplement.

neral reception of patients affected with contagious fevers, in Newcastle and Gateshead (2).

Of the former report I gave my opinion at a meeting of the committee, at the Infirmary, and was prompted to do so by a sense of justice due to the institution, and to myself as an individual interested in it. My sentiments on that report I need not repeat at present; but on the latter report I feel myself bound by the sense of duty which I owe you, to offer you in this manner, some immediate remarks, as I conceive the object of it to be highly inimical to the best objects of the old institution.

You are presented, then, at this moment with a report, containing arguments supposed to be given in favour of a proposal to you, to give up a part of the new building of the Infirmary, for the general reception of patients affected with contagious fevers, in Newcastle and Gateshead.

I will attempt to point out to you,

I. That this report is, in many respects, very delusive.

II. That the arguments respecting the danger of contagion being communicated, are contradictory and inconsistent.

III. That what remains of any value in the report, goes only to shew, that a proper place for the reception of persons affected with contagious fevers may be of utility in large and crowded towns, but not that this place should be part of an Infirmary: on the contrary, that so far from

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(2) See Report of the Committee, page 39, *et seq.*

shewing that a *fever-house* should be *joined* to an Infirmary, it tends to prove that it should be a *separate* institution.

1. The report appears to me, in many respects, very delusive (3).

Because, it conveys the idea that fever-wards, making a part of an Infirmary, have done the most possible good, without mentioning that the same good would have been effected by fever-wards, *not* making part of such Infirmary, and *without the danger* of contagion being communicated to such Infirmary.

Because, also, it supposes, that fever-wards in no one instance were the means of preserving the town in which they were, from a contagious epidemic fever, that raged in other and neighbouring towns; whereas the utmost good such fever-wards could have effected, was that of checking the progress of contagion when a contagious fever really existed.

Because, also, that places for the reception of patients affected with contagious fevers, have, in the report, the general appellation of fever-wards, whether they form part of an Infirmary or not; sometimes signifying part of an Infirmary, and sometimes a separate institution; so that the same approbation is given to fever-wards joined to an Infirmary, as to a fever-house forming a separate institution.

Because, also, calculations are made and a table is given, the former ascribing more good to places for the reception of contagious fevers than they merit, and the latter supposing more harm from the want of such places, than it is fair to conclude.

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(3) See Paper signed a Friend to Truth.

In this town the contagious fever, which was very prevalent ten and twelve years ago, *gradually disappeared*, as well as in many other towns, without any fever-house. From 1796 to 1800, it was almost extinct; in many parts it prevailed only in a small degree, not exceeding six cases in a month over the whole town; within *the last two years* it prevailed in a greater degree, and it is represented, that if a fever-house had been established, such an effect of natural and unavoidable causes would not have taken place: besides, it will be seen from the slightest inspection of the table given you, and I can assert it to be so from my own knowledge, that the fever of the last two years was not of a contagious nature, like the fever ten and twelve years ago, the number not gradually increasing, as it would have done if increased by contagion: it appeared to be a fever induced by debility, from the scarcity and quality of provisions, and not by the co-operation of certain causes producing malignant fever (4). It has now again nearly disappeared.

2. The arguments in the report, respecting the danger of contagion being communicated from one place or person to another, appear to me contradictory and inconsistent.

It is said in one part, that contagion has been communicated from one patient to another in a waiting-room, and spread *widely into the country;* and yet it is said in another part, that there is no danger of such contagion being carried to a distance, or from one part of the same building to another. It is said that medical officers have caught the infection in a consulting-room, and have fallen victims to it, and yet that there is no such danger in Infirmaries, where fever-

(4) See a subsequent Paper signed a Friend to Truth.

wards are established. Surely, on the contrary, such chances of communicating contagion to an Infirmary must be more numerous when there is any pretence for bringing persons infected to an Infirmary, than at present, when there is no such pretence; and when, on the contrary, they are strictly forbidden. In the name of common sense, if such accidents and mistakes have happened in an Infirmary where there are no fever-wards, and where fevers are prohibited, are they not likely to be more numerous in Infirmaries where there are fever-wards, and where fevers are not prohibited?

The arguments are inconsistent too;—they are so inconsistent with a previous report from the Dispensary, addressed to the inhabitants of Newcastle, in favour of a fever-house, where the danger of all the various modes of communicating contagion is pointed out, as to have induced a Governor of the Infirmary, on reading the latter report, to say, "that in the one there is nothing held out but the danger of catching infection; in the other, that there is no danger whatever." The report is inconsistent too, because the great argument in favour of a fever-house is, that an infected person may be removed to a distance from his family, to preserve them from contagion, and yet it is proposed to bring this infected person near the large family of the Infirmary! Besides such inconsistencies and contradictions (and more might be pointed out), there is a circumstance respecting contagion which has never been *alluded* to in the report, and which seems never to have been considered by those who composed it, viz. that contagion, unless of a specific nature, and not always even that, is seldom received but by the predisposed; that a person highly predisposed to receive contagion will be infected by it at a *greater distance* from the source, than one not so much predisposed to receive it, and consequently by a *smaller portion* of the contagion. Now, the great mass of patients in an Infirmary, are in a state

highly predisposed to receive contagion: they are in this respect more liable to receive contagion, compared with persons not weakened by disease or surgical operations, as gunpowder or lint is to receive the spark, more than less combustible bodies. Surely any master would have much fear in sending his servant with a candle into a ware-room, or near one, containing gunpowder, or lint, or oil, or spirits: and more fear in sending a candle near these, than less inflammable bodies. If I had time sufficient I would quote several instances from the best authors, shewing that contagion has been often carried by the wind to considerable distances, without its malignancy, judging from the effects produced, being lessened by the air. But I wish to avoid prolixity; any conclusions therefore, that can be drawn from the arguments in the report respecting the danger of communicating contagion are, that accidents from the communication of contagion have been frequent under apparently different circumstances, which apparent difference, a personal acquaintance with the circumstances only can explain; but that in the way they are exhibited in the report, one feels at a loss from their contradiction and inconsistency, to know what is meant that they should prove.

3. What remains of any value in the report appears to me therefore only to shew, that a proper place for the reception of persons affected with contagious fevers may be of utility in large and crowded towns, but *not* that this place should be part of an Infirmary: on the contrary, so far from shewing that a fever-house should be joined to an Infirmary, it tends to prove that it should be a *separate* institution.

What I have already advanced will tend to convince the dispassionate of the truth of these conclusions, and render any farther remarks almost unnecessary; but I will also ob-

serve, that a fever-house should not be joined to an Infirmary, if it is attended with the smallest chance of danger; because, the same good may be effected by a fever-house separate from an Infirmary without that danger; and because, out of the *four* different hospitals, mentioned in the report, to favor the proposal of a fever-house being joined to the Newcastle Infirmary, one, that of Manchester, notwithstanding the conclusions of Dr Haygarth, who was consulted, determined in the first instance, to have its fever-wards established *separate*, and at a distance from the Infirmary (5); and another, that of Liverpool, had its fever-wards *removed* from the Infirmary to the work-house; from the highly predisposed to the less predisposed. The present situation of Chester Infirmary is not named; but the remaining one of the four, the Edinburgh Infirmary, is the last that should have been mentioned in favour of fever-wards in an Infirmary. Next to the Newcastle Infirmary, I am most intimately acquainted with that of Edinburgh. I have now had the honour of being a member of the Newcastle Infirmary nearly *nine years*; it has not had in that time fever-wards, a place having been appropriated for accidental or contagious diseases, at a little distance from the Infirmary, and I can safely say, that it has not in that time suffered from contagion of any kind, though the majority of the patients are often in a state to be easily affected by any contagion. The Edinburgh Infirmary has fever-wards, and I can as safely say, that, it is seldom free from contagion (6), Dr Gregory says, "nor has there ever been any evidence or suspicion of its (the fever-ward) *increasing* contagion, or diffusing it through the hospital" I cannot positively assert, that the contagion so prevalent in the

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(5) See Mr Hutchinson's Letter, page 88.

(6) See Drs Hamilton and Rutherford's Letters, page 89 and 91.

Edinburgh Infirmary, *arises* from, or is *increased* by, the fever-wards; but surely no one will pretend to say, that it is essentially different from the contagion of fever: if it differ, it is only in degree. In the report from which you were led to the extension of the Infirmary, you have already been presented with the following account of the Edinburgh Infirmary. "In an Infirmary in a neighbouring kingdom the same cause is attended with equally baneful effects." "Our surgical patients," says Mr J. Bell, "*are exposed to infections from the medical wards*, and especially to a disease, the hospital sore, which seizes all those who have even the smallest incisions practised upon them: it infects all the ulcers, changes the slightest sores into gangrenes, and this disease, which is frequent in exact proportion to the size of an hospital, is so peculiar, that it is named the HOSPITAL GANGRENE. It is like a plague; it rages twice a year in such a degree, that even the nurses are infected: the slightest scratch in their fingers turns out a most formidable sore; and, in certain seasons, no operations can be safely performed (7)."

I apprehend this testimony was *then* thought sufficient to prove the existence of contagion in the Edinburgh Infirmary: from my *personal* inquiries I know it to be true. Would you in reading the *extracts* from Dr Gregory's letter to Dr Clark, suppose, that the Edinburgh Infirmary was frequently desolated with the effects of contagion, from which it is scarce ever exempt (8)? I need I am sure only put the question without any further comment.

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(7) See Mr Russell's Letter, page 97.

(8) See Dr Gregory's second Letter, page 93.

GENERAL REMARKS.

Into the best regulated Infirmaries, patients affected with contagious fevers have found access, though forbidden by the rules, from the difficulty of ascertaining the nature of the disease at the time of admission. Such patients, as soon as the disease was ascertained, would naturally be separated from the rest, and put into a room or ward the *farthest* from the other wards. Such must have been the origin of fever-wards in Infirmaries: a fever-ward was, therefore, considered the least of two evils; the less evil was endured, because it prevented a greater, not because a fever-ward was an approved adjunct to an Infirmary. Very serious consequences followed the inadvertent admission of patients affected with contagious fevers into the Liverpool and Manchester Infirmaries. The contagion was so great, that the patients were obliged to be taken out of the wards to extinguish it: no wonder then, that they have thought of having *separate* wards for such patients. Yet, even those two Infirmaries have not *now* such wards, neither within the building nor joined to it (9). Any one surely would rather have one of his extremities in a state of mortification, than his whole body; and after trying every means to preserve the body from its effects, without success, would consent to the loss of such diseased extremity to preserve his body. Such a person would not willingly try any experiment on any of his other extremities, that might endanger the health of his body, or cause another amputation. It is exactly the case with Infirmaries, and fever-wards: some infirmaries, like some persons, may have constitutions strong enough to resist the effects of a diseased extremity, but, if *the disease of the extremi-*

(9) See Mr Hutchinson's Letter, page 88.

ty should increase, or the powers of the system give way, nothing but amputation can save the remainder. Let us cut off, therefore, fever-wards from the Infirmary, or rather as the extremity is not YET *mortified*, let us not *try the experiment*. Let us proceed on an enlarged and liberal plan, a plan that will meet all dangers, without the smallest chance of increasing any. Let no part of the Infirmary be appropriated to the reception of contagious fevers, but let ALL OF IT be applied to the ORIGINAL PURPOSES OF THE INSTITUTION. Let a house for the general reception of persons affected with contagious diseases be obtained as soon as convenient; and let *accidental* cases that may occur in the Infirmary be *removed* to this house. Let it be for the use of the Dispensary, the Infirmary, the Poor Houses, Jails, and other places, and let it be for the reception of other contagious diseases as well as fevers. Let there be a ward for the SMALL-POX, THE SCARLET-FEVER WITH PUTRID SORE THROAT, &c. for I can venture to assert, that these two diseases have been more fatal, and have spread more by contagion within the last twelve months, than typhus fever in its most malignant form ever did in the same space of time.

Until such an establishment as this is accomplished, let us do as has hitherto been done; let us lessen the fatality of such diseases by every possible exertion; but let us keep the Infirmary PURE, and remove accidental cases from it to some *Out-House* as before.

You have lately proceeded on very enlarged views: let a union of interests establish a House for the general reception of all contagious diseases of a dangerous nature, at a safe and convenient distance from any other institution. This will be doing what will not, as far as human foresight can tell, require any future change. If we cannot accomplish *all* at present, let what we do accomplish be right.

In offering to you these sentiments and remarks, I solemnly disclaim any illiberal motives; and be assured that I could not have advanced a single argument on the subject, if I had not felt conviction in my heart, and that I had taken ground which I can maintain, and which I will never desert. I perhaps run the risque of sacrificing my interest to my principles, by differing in opinion with many respectable characters; but I have never yet hesitated to do so, when I conceived the public good was at stake, and I will not now do otherwise. My silence on this occasion would not have accorded with my ideas of my duty. I have endeavoured to fulfil this, and I trust in the liberality of which I have had great experience, that by doing so, I shall not suffer in your estimation.

J. WOOD, M. D.

TO THE GOVERNORS OF THE NEWCASTLE INFIRMARY.

June 15, 1802.

AT a special court of the Governors of the Infirmary, to be held at half past ten o'clock on the 24th instant, you will be called upon to decide on a proposition to be made, for the reception of infectious fevers in general, into certain wards of the new building connected with the Infirmary.

Previous to this Court, I am strongly impelled to submit to your consideration, a few facts, highly deserving your notice:—

1st. That it has ever been the anxious care of the Governors of the Infirmary, from its first establishment in 1751, to the present day, to guard against the admission of infectious diseases.

2dly, That the founders of the charity, conscientiously alarmed for the safety of the patients, had a house built at a distance from the Infirmary, for the reception of fevers of accidental occurrence.

3dly, That the fifteenth rule, co-existent with the charity, among other diseases, expressly prohibits infectious fevers; and a note on that rule, says, "from these indispensible restrictions, the most frequent and fatal diseases can receive "no relief at the Infirmary;" which circumstance gave rise to the Dispensary, an auxiliary charity.

4thly, As a proof, the Governors of the Dispensary thought it wise in the Governors of the Infirmary, to forbid the admission of fever patients: They say, in their annual report for 1784, "that, from the slightest inspection of their table, (i. e. table of diseases) it will appear, that the most considerable number of patients either laboured under diseases (i. e. fevers) of an infectious nature, which could not be admitted into ANY WELL-REGULATED INFIRMARY, or," &c. &c. &c.

From these facts it is evident, that the Dispensary was instituted principally for the relief of infectious diseases, which cannot be admitted into our Infirmary; and it is equally evident, that it is the imperious duty of the Governors of the Infirmary, to avert every innovation, every change, that has the smallest chance of endangering the lives of the numerous objects of their benevolence.—Should the question be carried,—how shocking to humanity will it be, to make our fellow-creatures, labouring under various and complicated miseries, IN-PATIENTS OF THE HOUSE, and in that very instant place them at the THRESHOLD OF DESO-

LATING CONTAGION (*)?—To guard the welfare of our establishment, let me earnestly intreat you, when you give your vote, to recollect this most excellent precept,—"And as you would that men should do to you, do you also to them likewise;"—then I should have no fears, no apprehensions, that the unsuspicious objects of the charity would, on their admission, be placed in situations of doubtful security.

A GOVERNOR OF THE INFIRMARY.

TO THE GOVERNORS OF THE NEWCASTLE INFIRMARY.

Newcastle, June 18, 1802.

LADIES AND GENTLEMEN,

I have this instant read a letter signed "A Governor," dated Newcastle, June 10, 1802, which, as far as relates to myself, demands immediate notice. The writer of that letter says, "on this very important but very clear point, it seems impossible that there should not be the most complete concurrence of opinion among the physicians and surgeons of the Infirmary; because if any of them had apprehended danger from the fever-house, he would, as a member of the building committee, undoubtedly have stated his opinion of the danger before the plan was finally resolved upon (1)."—Now I will, in the most unequivocal terms, declare, that at

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(*) See a subsequent Paper signed a Friend to Truth.

(1) See Paper signed a Governor, page 122.

no attendance of mine on the building committee did I ever hear a hint thrown out with regard to any intention of appropriating a part of the new building towards the establishment of a fever-house for the reception of fevers in general, that the first time I heard of such a plan was at the weekly committee on the 3d of June, when a motion was made for a special court to be held on the 24th of June, to take into consideration a proposition for rendering the fever-house of the hospital more generally useful.—That, disapproving of the questions to be discussed, I opposed the motion, tho' ineffectually (2). I then made a proposal to defer the special court till the assize-week, to take the chance of having the opinions of a greater number of the Governors on so important a question, than could be expected on the 24th of June; this also was refused.—This question, I must observe, if carried, appears to be highly fraught with danger to the patients of the Infirmary; for, waving all arguments about the limits of contagion, as to the distance when it becomes so diluted with atmospheric air as to be rendered innoxious, I will maintain there are other ways of communicating the contagion of fever besides proximity to the infected, to which the patients of the Infirmary will be exposed. Contagion, from indisputable proofs, can be carried by the wind, and infect at a distance.—Contagion, impregnating clothes and linen, will communicate infection. Persons visiting or attending the infected, can also communicate contagion to others, tho' they escape themselves: This last mode is very likely to convey it from the fever-house to the Infirmary, by the inattention and negligence of the nurses and attendants, whose clothes will always be fully saturated with contagion, and whose prudence in withholding all intercourse with the

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(2) See a subsequent Paper signed a Member of the Building Committee.

servants and patients of the Infirmary, cannot be depended on.—In short, the safety of the patients of the Infirmary against the danger of contagion from the fever-house may be rated thus:—IF the nurses and attendants in the fever-house strictly observe rules which may be prescribed to prevent the infection of patients in the Infirmary, PROBABLY they may be safe from this mode of infection (3).—This doubtful state of safety is in your power to avert,—it rests on your decision.

I am,

Ladies and Gentlemen,

Your obedient servant,

W. INGHAM.

ADDRESS TO THE GOVERNORS OF THE INFIRMARY.

Newcastle, June 19, 1802.

YOUR attendance at the special court, on the 24th of June, is highly important. As guardians of the Infirmary, you are called upon to defend the spirit of the institution, against every infringement.—Sophism and bold assertion are at work to mislead the understanding, and prevail upon you to appropriate a part of the new building to the establishment of a fever-house, for the reception of infectious fever in general, in direct violation of a rule, "That no women big "with child, no children under seven years of age, (except "those on whom surgical operations are to be performed) "no persons labouring under insanity, the small-pox, or

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(3) See a subsequent Paper signed a Friend to Truth.

" other INFECTIOUS distemper, afflicted with the cancer, " not admitting of operation, consumption, scrofula, or " dropsy, in the last stage, judged to be incurable or in a " dying condition, shall be admitted in-patients on any ac- " count." That such an establishment was never intended, I most seriously assert; and, for the truth of that assertion, I will venture to appeal to a considerable majority of the governors, the subscribers, and even of the members of the building committee. If there are men who thought otherwise, and intended, by delusive arguments, to entrap the governors, I am thankful that the snare has been discovered in time to avert the danger. You are not called upon, by any obligation, to accommodate the public with fever-wards, either adjoining the other wards in the new building, and under the same roof, or elsewhere. The welfare of the unsuspecting objects of your charity, in the strongest and most impressive terms, calls upon you for protection against the ravages of contagion, while patients in the house.—Let not, then, the cheerful hope of speedily returning to their families, with renovated strength and health restored, be endangered, or, perhaps, destroyed, by the destructive blast of contagion from fever wards.

You have been told, " that the contagion of the small pox " will not exceed the limits of a few yards, that the conta- " gion of fever is confined to a much narrower sphere;" and on authorities so celebrated, that to deny them would be arrogant, to doubt them skeptical. Yet we cannot forget, that many distinguished authors on contagion have always maintained, that the miasms of contagion are frequently carried by the wind to, and infect at a distance from the source of contagion. In support of this opinion, I shall quote what the learned Dr Wilson, physician to the county hospital at Winchester, &c. &c. in his excellent treatise on

fever, says, in the section on contagion :—" Contagion may " be conveyed from place to place by the wind, and thus " the disease may be communicated at a considerable dis- " tance from the sick.—In proof of this, many facts might " be adduced : One of the most striking, on record, hap- " pened on the 11th of May, 1750, at the Old Bailey : The " prisoners were kept, for near a whole day, in small, ill- " ventilated, and crowded apartments,—some of them also " laboured under the jail-fever : When they were brought " into the court, the windows at the end of the hall, oppo- " site to the place where the Judges sat, were thrown open ; " the people on the left of the court, on whom the wind " blew, were infected with a malignant fever, while those " on the opposite side escaped.—The Lord Chief Justice and " the Recorder, who sat on the Lord Mayor's right hand, " escaped ; while the Lord Mayor, and the rest of the bench, " who sat on his left, were seized with the distemper.— " Many of the Middlesex Jury, on the left side of the court, " died of it ; while the London Jury, who sat opposite to " them, received no injury."*

I have said, that the majority of the governors, subscribers, and members of the building committee, never intended the measure proposed ; and I have also strong presumptive evidence, that a few weeks ago it was never thought of by any individual ;—else why suffer that committee of the Dispensary, nominated a Board of Health, to apply to the parishes for parochial aid, towards the establishment of a fever-house, an institution, in a proper place, promising great benefits to the community ?—Believe me, had this plan gone smoothly on, the peace of the Infirmary, in all probability, had never been disturbed.

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* See a subsequent paper, signed a Friend to Truth.

Should there remain any supernumerary wards, after carrying into effect the plan for the internal improvement of the Infirmary, and melioration of the state of the patients, (your pledge to a liberal and respectable list of subscribers yet unredeemed) I am persuaded such supernumerary wards might be advantageously employed during the time of white-washing and cleaning the wards in common use, by removing the patients into these supernumerary wards, while their own wards were cleaning; at other times they might answer a very beneficial purpose, by appropriating them, at the discretion of the weekly committee, to the reception of patients sent by governors at a distance, at times when the house, having its usual number, is said to be full: From the want of such accommodations, you frequently see patients, offering themselves for admission from the distant parts of the counties of Durham and Northumberland, labouring under great debility and painful diseases, yet compelled to return home, greatly aggravating their disorders, or otherwise obliged to take lodgings in the town, at a considerable expense, ill adapted to their circumstances, for two or three weeks, till they are able to be admitted; and what has always been the fever-ward, at a distance from the house, for the reception of fevers of accidental occurrence, had better remain so;—one fever patient of this kind, in less than three or four years, is a rare occurrence, and scarcely is there to be recollected an instance of two patients labouring under infectious fevers at the same time.

I have no doubt, if the intended measure is carried into execution, that you may say with the surgeon,* at Naples,

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* At my visit to the hospital of the galley slaves, at Naples, which is on the shore fronting the bay, on my telling the surgeon, that in

" that the whole building must soon be a fever-hospital."—In short, recommendations to your Infirmary will seldom be sought for;—self-preservation teaching the poor man, labouring under disease, to bear his varied misfortunes patiently, rather than subject himself, probably, to a worse disease, by exposure to the fatal effects of contagion.——You ought not to build institutions, eventually useful, on the ruin of institutions distinguished for their benefits through a long series of years.—The merits of the measure to be proposed have been explained to you, in various addresses, sufficient to aid your judgment.—Give them that deliberate consideration they require.—Establish your opinion,—defend your establishment.—The fascinating powers of oratory may charm your ear, the subtlety of reasoning strike you with amazement; yet, if you deem your Infirmary worth shielding from this inimical attack,—BE FIRM.

A FRIEND to the PRESENT INSTITUTION.

TO THE GOVERNORS OF THE NEWCASTLE INFIRMARY.

IN a Letter addressed to you on June 14th, by Dr Wood, the arguments he has offered to you, and the deductions he has drawn are so generally inconclusive, that although they are founded for the most part on the supposed inconsistencies in the two reports issued from the Dispensary, my connexion with which charity must be my principal apology for soliciting your attention; I would have cheerfully left them to sink under their own want of force to produce conviction,

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some countries a part of each galley is made an hospital, (alluding, in my mind, to our hulks) he replied, "That it must soon make the whole an hospital."—*Howard on Lazarettos, page* 218, *4to edition.*

had he not, (I hope and trust unguardedly) hazarded some assertions, not only unfounded in fact, but too extensively mischievous in their probable application, to be past over without contradiction.—To the remark of *his* "*Governor of the Infirmary*" on the two Reports, it is sufficient to reply that it is perfectly just, but that he certainly was not aware of the conclusion to be drawn from it: the first report states, without exaggeration, from an undisputed series of facts, the danger to society in general, and to the poor themselves in particular, in their being left to struggle with diseases of high contagion in their own miserable habitations; and the second, from equally indisputable documents, is calculated to dispel every apprehension of danger from removing them to a suitable house appropriated to their reception and recovery. I am far from the presumption of offering (were it necessary) any defence of the opinions of those humane and enlightened Physicians who have given you the result of their own experience; they would rest on their own foundations in the face of objections infinitely more formidable; and for the unanswerable reasons for annexing the House of Recovery to your institution, instead of making it a separate one, I confidently refer you to Dr Clark's Letter, and to that addressed to you on the 10th, by a Governor.

I now come to the assertions I hold it my duty to contradict; the first is contained in this quotation from his letter,—"And I can assert it to be so from my own knowledge, that the fever of the last two years *was not of a contagious nature*, like the fever ten and twelve years ago, the number not gradually increasing, as it would have done if increased by contagion: it appeared to be a fever induced by debility, from the scarcity and quality of provisions, and not by the co-operation of certain causes producing malignant fever." With the latter part of the sentence,

as being chiefly matter of opinion, I have professedly nothing to do; but may perhaps be pardoned the observation, that, from innumerable facts, open to every unprofessional man in common with myself, there need be no hesitation in asserting, that a fever originating in penury and want, is not prevented by that circumstance from contracting the highest degree of infectious malignancy; and to the unqualified assertion in italics (believing Dr Wood to be superior to the evasion of taking refuge in the loose and general expression, "like the fever ten and twelve years ago,") I oppose as unqualified a contradiction, and am ready to support, by the most unexceptionable testimony, that under the circumstances in which the poor were affected, and which it is our object to remove, viz. their miserable dwellings and wretched accommodations; the fever was in a very high degree contagious, and had not only spread widely by infection amongst that class, but had made alarming inroads into the superior ranks of society.

And to his next assertion, that "It has now again nearly disappeared," I am sorry that I have to reply, that whilst I join with every one in thankfulness for its present comparative abatement, owing greatly to the skill and humanity of the medical department of the Dispensary, my accounts of the extent to which it yet prevails, will not warrant the flattering but delusive and dangerous security that his defective information would tend to disseminate.

Avoiding as I do, any notice of reasonings merely speculative, I may yet be permitted to remark, how easy it would be to retort the charge of inconsistency upon the Doctor, who, after recurring with tiresome repetition to the imaginary danger to the Infirmary patients, from a fever-house as effectually secured from all, but deliberate and wilful communication, as if it was a mile distant, gravely proposes an

hospital into which small-pox, scarlatina, and typhus, shall be indiscriminately admitted: but my situation in the Dispensary enables me to refer to a more important instance of his versatility, as I may venture to call it, till he informs us on what grounds he has changed his opinions. About nine years ago, Dr Ramsay read, in the Medical Society, a paper, recommending the erection of a fever-house, and to it was added the sketch of a plan for its establishment, in which the reason for annexing it in preference to the Infirmary, is suggested in these words:—"If it should be thought proper to incorporate it with the Infirmary, this advantage would be obtained, that no new interior arrangements would become necessary." Of this plan, I am informed from authority I cannot dispute, Dr Wood was the decided advocate, and was one of the Committee who presented an address to the Governors of the Dispensary, requesting their sanction, and the assistance of their funds, to carry it into execution: To this statement, I surely need add no comment; how the scheme miscarried at that time, it is not to the present purpose to relate: I disclaim all disrespect for Dr Wood's medical abilities, and still more any imputation on the purity of his motives; but in his opposition to the proposal now before you, I think he is biassed by reasons, which I hope his maturer reflections will induce him to relinquish.

A GOVERNOR of the DISPENSARY.

QUERIES, ADDRESSED TO W. INGHAM, ESQ. IN CONSEQUENCE OF HIS LETTER TO THE GOVERNORS OF THE INFIRMARY.

June 20, 1802.

1. DID you not, last year, concur in the report of the committee for the improvement and extension of the Infir-

mary, in which report it was proposed to erect a fever-house capable of containing FOURTEEN beds?

2. Did you not know from your own experience of the Infirmary, that fevers of accidental occurrence therein would at no one time require FOURTEEN beds, or even SEVEN beds?

3. Did you not know, from undoubted medical facts and calculations, open to every reader, that a well-constructed hospital, where due regard is paid to ventilation, cleanliness, and the separation of patients, was never likely to want even SEVEN beds for fevers of accidental occurrence?

4. When arrangements were made some months ago, by which the fever-house was rendered capable of containing TWENTY beds, did you believe that additional provision of beds to be made solely for fevers of accidental occurrence?

5. If you concurred in the plan of the present fever-house, and neither expressed any fears about contagion at that time, nor during its erection, is not the INFERENCE JUST, that you concurred upon the principle on which it was recommended, viz. its SAFETY with respect to the other patients?

6. Is not the SAFETY of the other patients the same, whether the fever-house you concurred in erecting, contains fevers from the Infirmary or from the town?

A short and distinct answer to each of the above queries, will oblige

A FRIEND TO FEVER-WARDS.

REMARKS ON DR WOOD'S AND MR INGHAM'S LETTERS, DATED JUNE 14TH AND 18TH, 1802, ADDRESSED TO THE GOVERNORS OF THE INFIRMARY.

June 21, 1802.

A proposal has been lately made to the Governors of the Infirmary, to convert a part of the new building into wards for the reception of patients affected with contagious fever. In support of this proposal, a number of well-authenticated facts have been adduced; to which are added the testimonies of several eminent physicians, which shew the safety, propriety, and even the necessity of this measure. A proposal of so much importance, and so intimately connected with the state of public health, merits our most serious consideration, and will, no doubt, obtain a candid discussion on the day appointed; when it is hoped that sound and substantial reasoning, not positive unfounded assertion, will be attended to. Dr Wood, impressed no doubt with the importance of the subject, has, with the laudable intention of warning the public against what is termed an innovation, addressed a letter on this subject to the Governors of the Infirmary. I shall not so far forget the respect due from one gentleman to another, especially in matters of science, as to style his address "delusive, contradictory, and inconsistent,"—but shall beg leave to offer a few remarks which occurred in perusing it. Dr W. has however applied these terms to a candid narration of incontrovertible facts: He considers the report as delusive:—

1st, *Because* it does not attribute the same good effects to fever-wards, unconnected with an Infirmary. This was certainly not necessary; for no doubt has ever been entertained of the propriety of separating the infected from those in

health, in the most infectious of all fevers, the plague. All that was necessary, was to prove, that contagion could not be communicated to the other wards of the Infirmary; which has been demonstrated by the most satisfactory evidence.

2dly, *Because* it attributes the credit of preserving a town from a contagious epidemic fever, which raged in the neighbourhood, to the institution of fever-wards; "whereas," Dr W. ingeniously observes, "the utmost good such fever-wards could have effected, was that of checking the progress of contagion when contagious fever really existed." This is exactly what the report tends to prove, and what it holds forth as the chief advantage of the institution. Does Dr W. think that fever-wards ought to act by some secret influence, and to preserve a town free from contagion, as an amulet is supposed to protect its wearer?

3dly, *Because* the general appellation of fever-ward is attached to places for the reception of fever-patients, whether connected with an Infirmary, or in a separate institution. I hope Dr W. will pardon me, if I call this a frivolous objection; though, to make a distinction without a difference, we may allow him to term one fever-*ward*, and the other fever-*room*.

4thly, *Because* calculations, &c. are made, which ascribe more good to places for the reception of contagious diseases than they merit, and suppose more harm to ensue from the want of them than is fair to conclude. Here Dr W. ought not to have remained satisfied with mere contradiction; he should have attempted to prove, from more accurate documents, the falsity of the statement, or the fallacy of the conclusions.

Dr W. further observes, that the contagious fever which was very prevalent ten or twelve years ago, *gradually disappeared*, without any fever-house. But might it not be said in reply, that if proper precautions had been taken, and fever-wards had been established, the disease would have been *rapidly extinguished?* The fever of the two last years is said not to have been contagious, but to have been induced by debility, from the scarcity and quality of provisions. Now this is known to be one of the most powerful exciting causes of malignant fever: It is the invariable attendant of famine, and always increases the horrors of a besieged town.

Dr W. next attempts to shew, that the arguments in the report respecting the communication of contagion, appear contradictory and inconsistent. For in one part it is said, that contagion has been communicated from one patient to another in the waiting-room of an hospital; and in another part, it is said, there is no danger of contagion being carried to a distance, "or from one part of the same building to another." In answer to this, it may be asked, if Dr W. seriously thinks there is no difference between a patient when first admitted into the waiting-room, with his clothes nearly saturated with contagion, and when placed in a clean bed, after having undergone a complete ablution, and having his infected clothes removed? This constitutes one of the chief benefits of the proposed institution, it is particularly insisted on in the report, and brings the poor sufferer upon a level, with respect to comfort, with his more opulent neighbours. This does not constitute the whole advantage of the plan; besides the comforts of clean linen, &c. more necessary to him than medicines, he is removed from his family, and prevented from infecting them with the contagion which emanates from every pore. In performing this charitable office, however, he is not removed, as has been very disingenuously

asserted, into a larger family, who are thus, as a Governor very poetically expresses himself, placed at "*the threshold of desolating contagion.*" The futility of this objection is so clearly pointed out in the Report, that it would be idle to insist longer upon it.

Dr W. after remarking that the Newcastle Infirmary, though without fever-wards, has not suffered from contagion of any kind, during the last nine years, adds, that the Edinburgh Infirmary, which has fever-wards, is seldom free from contagion. This assertion may be very just, because fresh cases are continually pouring into those wards from without; for Dr W. cannot prove, in opposition to what is so positively declared by Dr Gregory, that the patients in the other wards, are more frequently affected with fever in the Edinburgh Hospital, than in others, without fever-wards. Moreover, if we consider, that the wards of the Edinburgh Infirmary are daily crowded with two or three hundred students, who have access to all parts of the building, we should apprehend that if contagion were really so prevalent in this hospital, few of these young men would escape it, or at least that they would spread the contagion among the other patients, which does not happen.

Dr W. asks, "Would you, in reading the *extracts* from Dr Gregory's letter to Dr Clark, suppose, that the Edinburgh Infirmary was frequently desolated with the effects of contagion, from which it is scarce ever exempt?" To this, I answer *no;* nor did I ever hear of that Infirmary being *desolated* by contagion more than other hospitals, nor do I believe it.

Dr W. will recollect, that a few years ago, the ward for the reception of lying-in women, was in the upper story of the Edinburgh Infirmary, which is described by Dr W. as a

pest house. In this situation, women are remarkably susceptible of, or as medical men term it, *predisposed*, to be acted on by contagion,—much more so than "the great mass of patients in the Infirmary;" yet, notwithstanding its being under the same roof with the fever-wards, and notwithstanding the frequent communication, which the pupils who attended midwifery, had with this, and the other wards of the hospital, contagion was not carried there, nor was puerperal fever more frequent than in other lying-in hospitals solely destined to that purpose.

As an additional proof of the infected state of the air of the Edinburgh Hospital, Dr W. quotes the following passage from an ingenious surgeon, Mr J. Bell.—"Our surgical patients," says Mr B. "*are exposed to infections from the medical wards*, and especially to a disease, the hospital sore, which seizes all those who have even the smallest incisions practised upon them: It infects all the ulcers, changes the slightest sores into gangrenes; and this disease, which is frequent in exact proportion to the size of an hospital, is so peculiar, that it is named the *hospital gangrene*. It is like a plague; it rages twice a year in such a degree, that even the nurses are infected; the slightest scratch in their fingers turns out a most formidable sore; and, at certain seasons, no operations can be safely performed." This dreadful disease, the nature of which is not understood, may *perhaps* arise from contagion; and if Dr W. chuses, it shall be allowed to arise from the contagion of fever; but as a proof that such a contagion can be confined to one part of an hospital without spreading, I shall quote the following observations upon this alarming disease, the hospital sore, from the same ingenious author:—"Thus we see this disease confined within the walls of an hospital; nor does it always extend further than a single ward. In Yarmouth, the English sea-

men who were wounded on the 11th October, were divided from three hundred wounded men of the Dutch, by a *wall only;* the great wards were on the opposite sides of the partition under one roof; on the one side of that partition we operated on men and boys, opened sinuses, or searched for balls or pieces of shot, as freely as in the most healthy hospital, or in sick quarters; not a sore was to be seen there, except such as were the inevitable consequence of gun-shot wounds, with carious bones. *But on the other side of the partition* wall were such sores as are seldom to be seen, prohibiting all operations, even the most trivial."—*Bell's Principles of Surgery.*

In the last Newcastle paper is inserted a letter from Mr Ingham, in which he objects to the plan of fever-wards; but he produces no arguments, no solid reasons, for his dissent. Does Mr I. suppose, that an inquisitive and enlightened mind, weighing the merits of a question of such importance as the present, can rest satisfied with the bare opinion, however positively delivered, of any individual? What proofs does Mr I. bring of this plan being "highly fraught with danger to the patients of the Infirmary?" He professes to wave all arguments respecting the limits of contagion, the very point upon which we ought to have been presented with some useful and accurate information; the point upon which rests the propriety or impropriety of the measures to be adopted. If Mr I. be really convinced of the impropriety of the plan, he ought, by the united weight of facts and argument, not by *bold assertion*, to implant conviction in the breast of every Governor; for what we understand ourselves, is easy to communicate. Mr I. observes, "there are other ways of communicating the contagion of fever, besides proximity to the infected;" this is known to every tyro in medicine, and has been unfortunately experienced by thousands. Mr I. further observes, "that contagion can be car-

ried by the wind, and infect at a distance;" this is very true, *at a small distance*, as happens in the plague, though the precise number of feet is not determined. The most remarkable instance, perhaps, on record, of contagion being conveyed by the wind, is that which occurred at the *Black Sessions* at the Old Bailey in 1750. Some of the windows of the court having been left open, the people, to leeward of the prisoners, were infected with malignant fever, of which many died, —while those on the windward side escaped. "Many of the Middlesex Jury who sat on the left side of the court, died of this fever; while the London Jury, who sat opposite to them, received no injury." This affords to my mind one of the strongest proofs of the limited action of contagion; otherwise, in so crowded a place, the malignant effects of it would have been more uniformly and extensively felt. But to remove all apprehension of *the wind blowing through*, the architect of the Infirmary may be recommended to apply an additional coat of lime to the partition walls.

The objections drawn from servants communicating contagion, do not militate against the proposed plan; *all families* are daily exposed to it, much more indeed than they apprehend, as may be seen in Dr Clark's letter to the Members of the weekly Committee. If, however, the nurses of the Infirmary cannot be depended on, they are unfit for the office; let them be discharged; the credit of the hospital is diminished by such an objection, for the *supposed punctuality* of the nurses is one of the chief advantages it possesses over a private house. But does Mr I. imagine that the nurses of the fever-wards will be more remiss than those of the fever-house, provided for the casual appearance of contagion in the Infirmary? I should think the contrary; and I must object to the exaggerated expression of their clothes being

"always *fully saturated* with contagion;" which is so far from being true in any such extent, that in a well ventilated fever-house, accompanied with such precautions as he may be certain will be adopted in this, there can be no rational grounds to apprehend their clothes retaining any contagion at all.

Mr I. concludes with observing, "If the nurses and attendants in the fever-house strictly observe rules which may be prescribed to prevent the infection of patients in the Infirmary, PROBABLY they may be safe from this mode of infection." Here we find argument supplied by a futile *insinuation;* Mr I. would blush to be suspected of really entertaining this opinion, for he knows every one in the least conversant with the subject, knows that, instead of *probably*, they would be CERTAINLY safe.

I shall only add, that if facts, stubborn facts, be produced on one side of the question, similar facts out to be brought forward on the other; to withold reasons, which a person professes to possess, is to treat the Governors with inattention and disrespect. If, therefore, the testimonies adduced by Dr Clark, continue, as they still do, uncontroverted, for the gentlemen above mentioned have not ventured even to notice them, it must imply, on their parts, a tacit acknowledgement of their validity.

A FRIEND TO TRUTH.

ADDRESS TO THE GOVERNORS OF THE INFIRMARY.

Newcastle, June 22, 1802.

LADIES AND GENTLEMEN,

I must once more intrude myself on your notice, in consequence of a number of queries, addressed to me by an *anonymous* writer, to which I have subjoined answers.

Query I. Did you not, last year, concur in the report of the committee for the improvement and extension of the Infirmary, in which report, it was proposed to erect a fever-house, capable of containing fourteen beds?

Answer. I kept no journal of the committee meetings, and I recollect no such report.

Query II. Did you not know, from your own experience of the Infirmary, that fevers of accidental occurrence therein would at no time require fourteen beds, or even seven beds?

Answer. Answered in the affirmative.

Query III. Did you not know, from undoubted medical facts, and calculations open to every reader, that a well-constructed hospital, where due regard is paid to ventilation, cleanliness, and the separation of patients, was never likely to want even seven beds for fevers of accidental occurrence?

Answer. Answered in the affirmative.

Query IV. When arrangements were made, some months

ago, by which the fever-house * was rendered capable of containing twenty beds, did you believe that additional provision of beds to be made solely for fevers of accidental occurrence.

Answer. This arrangement unknown to me.

Query V. If you concurred in the plan of the present fever-house, and neither expressed any fears about contagion at that time, nor during its erection, is not the inference just, that you concurred upon the principle on which it was recommended, viz.—Its safety with respect to the other patients?

Answer. I could concur in no such plan, always wishing the present fever-house, at a distance from the Infirmary, to be continued as such.

Query VI. Is not the safety of the other patients the same, whether the fever-house you concurred in erecting, contains fevers from the Infirmary, or from the town?

Answer. Answered by the answer to *Query* V.

Various reports and publications compel me also to declare, that I never concurred in any report or measure with the most remote tendency towards establishing a fever-house, for the reception of infectious fevers in general, in the west

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* If the intention was a fever-house, for the reception of infectious fevers from Newcastle and Gateshead, why was it not in language unequivocal in the order of the building committee, so clearly expressed, that such was the intention, as not to leave to conjecture what could have been by words expressed beyond every doubt?

end of the new building:—And I also further declare, that I must have despised myself for my duplicity, if I had ever entertained such a thought, after requesting many of my friends to subscribe towards the extension of the building, and its internal improvement, without any other avowed motive. I have seen no proofs sufficiently numerous, or conclusive, to make me unnecessarily place the patients of the Infirmary in the dangerous situation they are threatened with. I know they are now safe under the present establishment; and, for my own part, I never will consent to any measure to make that safety uncertain. What is at present known of the laws of contagion, or of the powers of prevention, falls far short of what I should judge necessary, before I presumed to declare the security of the patients against infection certain.

Before I take leave, I must likewise declare to you, that I am a friend to the establishment of a fever-house, in a proper situation, for the reception of infectious fevers in general; so much so, that in a conversation with Dr Clark, a few weeks ago, I intimated to him my readiness to subscribe to a proper building; and also to become an annual subscriber towards the support of such an establishment.

I am,

Ladies and Gentlemen,

Your obedient servant,

W. INGHAM.

TO THE GOVERNORS OF THE INFIRMARY.

June 22d, 1802.

GENTLEMEN,

SO many addresses have been made to you, preparatory to the meeting of the 24th instant, that I cannot expect to engage much of your attention: Mine, however, shall at least have the merit of being short, and, I trust, of being temperate also. Mr Ingham, in his advertisement, says, that he wished to have given the Governors more time to consider the important question referred to them; but that all his proposals for that purpose were *refused* by the members of the committee. Now Mr Ingham must recollect, that the only question was, as to the time most likely to obtain a full meeting of the Governors; and that it was agreed by every person present, except himself, that the races afforded a fairer claim for this than the assizes, or any period between those two meetings. Mr Ingham also says, that he never heard of the intention of appropriating the fever-house to general purposes, before the 3d of June. This seems little to the purpose. He and the other medical gentlemen all knew that a fever-house was to be built; and they none of them opposed it. Whether it were afterwards used for contagious fevers, of accidental or of general occurrence, could make no difference to the safety of the other patients in the hospital: But its size and extensive accommodations must have convinced every man of observation, that its usefulness ought not to be confined to fevers contracted in the Infirmary.

The question for you to decide is a very simple one, and depends little upon the "fascinating powers of oratory, or the subtlety of reasoning." By opening the fever-house of the Infirmary to the public, great good will be produced,

without any expense. The building is ready, and constructed upon the most approved plan for the purpose: The parishes are willing to pay for the patients to be admitted into it; and it is allowed to be sufficiently large to preserve the town from the miseries of contagion. The rules of the Infirmary certainly forbid contagious disorders to be admitted into the hospital, for the plainest of all reasons,—lest they should infect the other patients: But if the fever-house be so constructed as to obviate all fear of infection, then, as the reason of the rule ceases, the rule itself can no longer apply.

The only question then remaining is, whether there be any danger of infection or not?

Now, tho' the two buildings be under the same roof, the entrances will be at a greater distance, and the walls of separation may be made thicker than those of the best houses in this or any other town. Both parts of the hospital will be well ventilated, and better precautions taken than can be in any private family, and no communication allowed except the attendance of the Medical Gentlemen; the danger of infection therefore will be, clearly, less than in your own houses. Indeed, when we consider the order observed in a well regulated hospital, the general controul of an intelligent committee, and the constant inspection of the Physicians and Surgeons, it seems to me to require no authority but that of common sense, to persuade us of the safety of the proposed plan. Were authorities however wanting, we have the clear opinion of very many Physicians, who have attended greatly to the laws of contagion, with their reasonings on the subject, not founded upon hypthesis or doubtful cases, but upon extensive experience, and accurate observation. To these I refer you, with perfect confidence that you will give them the weight which they well deserve.

What has been brought forward by the opponents of the proposed plan? Single facts, reported by persons little acquainted with the laws of contagion, and, if rightly understood, by no means hostile to the opinions above stated; general assertions of public danger, without either proofs or argument to support them, and insinuations that there is some intention "to entrap and delude the Governors." I believe I speak the sentiments of most of the Members of both your Committees: and I can venture to say, that we neither have, nor indeed can have, any object but that of faithfully discharging the trust you have reposed in us.

By a MEMBER of the BUILDING COMMITTEE.

TO THE GOVERNORS OF THE NEWCASTLE INFIRMARY.

Newcastle, 22d June, 1802.

I feel myself called upon again to address you; but it must be in a very concise manner, as I have now only time, before the meeting of the 24th, to state a few facts.

I must first notice the letter addressed to you on the 10th, by a Governor: he says, "In *consequence of the resolution* of a special court, held June 25th, 1801, *an airy, spacious fever-house has been constructed.*" In the report presented to you at that court, pointing out what was necessary for the Infirmary, it is said, "But as the Infirmary would be still very imperfect, without further accommodations, your committee propose to set apart, together with a distinct wash-house for cleaning and purifying the patients' cloaths, *two rooms capable of containing six beds each,* for infectious dis-

cases of accidental occurrence, to which patients may be removed to prevent the contagion from spreading through the whole house:" so that the proposal of two rooms, capable of containing six beds each, is now extended to an airy, spacious, fever-house: and the Governor after this says, "It must have been generally understood by the faculty, that a fever-house, originally designed to hold twelve beds (but now able to contain 20), had a more extended object. The contrary supposition is absurd. No objection being then urged, their assent to the plan and purposes of the building is unquestionably implied. And what can be more illiberal and unjust, than to suppose any of them capable, after an implied concurrence, of bringing forward objections just at the moment when the fever-house is actually ready to become the instrument of general good?

And again, "The writer of this letter flatters himself that, should unforeseen opposition arise to the application of this fever-house, no blame can be attached to the acting part of the committee by which it was built, when it is remembered that they proceeded upon the authority of a special court, and had moreover the strong reasons stated above for inferring the concurrence of all the faculty in the safety and propriety of the measure."

It seems only necessary to quote these passages; it would be superfluous to add any remarks; I will only say for myself, as an individual, that at a meeting of the committee at the Infirmary, to discuss the report, I objected, not only to the proposed extent of the new building as unnecessary, but also to any extension of the Infirmary, on the grounds held out to the public. After such general objections, I proceeded to point out in detail, the parts of the report to which I particularly objected; but I soon saw the business was predetermined: from that time I did not think it necessary

to attend the committee, more especially as I had refused to give my assent to the appeal to the public for the proposed extension, on the grounds mentioned in the report: but when I saw an advertisement in the public papers, giving notice of a special court to be held, to take into consideration a proposal for giving up a part of the building for the general reception of persons affected with contagious fever, I attended the next meeting of the committee on the 10th, and objected to the proposed measure; and yet in the letter of the 10th, by a Governor, it is said, "On this important and very clear point, it seems impossible that there should not be the most complete concurrence of opinion among the physicians and surgeons of the Infirmary; because, if any of them had apprehended danger from the fever-house, he would, as a member of the building committee, undoubtedly, from a sense of duty, have stated his opinion of the danger *before the plan was finally resolved upon.*" But I will give the writer of this letter the liberty of saying, that he meant only the original fever-wards. I will then ask, How could any of the faculty have apprehensions from the establishment of such wards, when, from the experience of the past, accidental cases of contagious fever, or of any other contagious disease, had not occurred in the Infirmary above once in two or three years?

I will next make some remarks on the letter addressed to the committee on Thursday last by Dr Clark; they will *only* give you *some idea* how the business has been conducted. I will not pretend to criticise any arguments in it in favour of a fever-house joined to an infirmary; for it appears to me applicable to the other side of the question, where it is intelligible: in some parts the meaning is so obscure, that I confess myself at a loss to develope it. No one, however, can be at a loss to see with Dr Clark the propriety of the conduct of the commander of the Salisbury—he anchored

his ship *at a distance* from the rest of the fleet, and *preserved* his crew in perfect health;—so far on the question of safety or danger to the Infirmary from a fever-house *in this letter*.

Dr Clark then says, "No adequate remedy occurred to obviate this evil (the spreading of contagion) till a correspondence with Dr Haygarth commenced. His enlarged mind conceived the means of preventing the spreading of the small-pox, and successfully proved its practicability by the test of experiment. From that moment I have *watched* a favourable opportunity for proposing an institution for removing fever patients from their infected habitations to a proper house of reception, and for *cleaning* and *purifying* the infected houses, agreeably to the original plan of the society at Chester for eradicating the small-pox. When the improvement and the extension of the Infirmary of this place had received the sanction of a special court, I thought that a fortunate æra had arrived, when this great work of humanity would be effected with ease, and certainly without medical opposition." From this you may see that the plan of a FEVER-HOUSE was a *secret motive* for applying to you for the extension of the Infirmary, which plan has been gradually disclosed, and now it is attempted to complete it by a *coup de main*. Would you not have been STARTLED if you had been called upon at first to subscribe towards the building of a FEVER-HOUSE to the Infirmary? This letter was sent to the house-committee on Thursday, two gentlemen were there to receive it; a third (accidentally, I believe,) was present; and they published the thanks of the building-committee to Dr Clark.

The whole amount of the letters annexed in a postscript, is only this: that fever-wards may be safely joined to an in-

firmary, *if the rules of preventing the communication of contagion are not transgressed.*

The writer of a letter to you, signed "A Governor of the Dispensary," scarcely deserves to be noticed. The assertions he opposes to mine can only be answered by a detail of facts, which I am very ready to give; and, in proving one of my assertions, I perhaps can give him information that may not only shew how defective his has been on the subject, but also that he does not seem capable of distinguishing fever arising from contagion, from fever arising from an epidemic cause: but I ought not to trouble you with such observations, as they do not apply to the question in which you are interested; but I must most unequivocally contradict an assertion of this writer, that I was some years ago the decided advocate of a plan for a fever-ward to be joined to the Newcastle Infirmary. I never, at any time, entertained an idea of proposing a fever-ward as a part of the Newcastle Infirmary. *A house* for the reception of particular cases of contagious fever I have at different times thought of; but I would not propose even that to the public on any exaggerated statement of the contagious nature of the late prevailing fever. The circumstances of my advocating the plan of a fever-ward annexed to the Dispensary would, if detailed, rather, I trust, do me credit: now that it is brought to my recollection, I remember Dr Clark was at that time (nine years ago) a decided enemy to the fever-house then proposed.*

But if I even had advocated the idea of annexing a fever-ward to an Infirmary nine years ago, it certainly does not

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* See Dr Clark's paper on the subject, page 26.

argue any versatility, to see danger to the Infirmary by such a proposal, at the end of nine years, which I did not then see; and the confession would not be attended with any difficulty to a generous and candid mind. Perhaps the writer of this letter would have been glad if the late minister of this country had not seen the danger of a parliamentary reform, after proposing it some years before. *Perhaps* I have incurred *this* gentleman's displeasure, by arraigning in a public manner, some proceedings in which he may have felt himself concerned, and which appeared to favour Jacobinism, at a time when I conceived every man was called upon to stand forth against such principles. I therefore do not "disclaim all disrespect" for this man, who has received from me now more notice than his contemptible letter deserves.

The last *production* I have to notice reposes at present on your table at the Infirmary. In it every thing is repeated that has been repeated before; every thing is accumulated that industry could produce, to persuade and to confound. Many of the authors of the letters, copies of which are exhibited, do not know that the question in dispute is, not about the propriety and efficacy of a fever-house in a large town, but about the propriety of a fever-house being joined to your Infirmary*. Under any circumstances I do most warmly oppose such an adjunct to an infirmary, on the principle of its being not only dangerous to the institution from the chance of contagion being communicated, but also from the consequences attending any innovation. But *under all the circumstances* of the present proposal, such opposition

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* Plans of the Infirmary were sent to most of those gentlemen from whom communications have been received.—*Editor.*

must be very much increased; and *these* are in some measure now before you.

Read with attention, I entreat you, the address to you, signed, "A friend to the Institution;" and read the short address of a Governor of the Infirmary, which concludes with that golden rule of conduct, "Do as you would be done by." Ask yourselves whether in the places of your several abodes, any of you would consent to a fever-house being joined to the house in which you and your families live, the windows of the fever-house being in a line with yours? If a fever-house was joined to any of your houses, and you knew the windows of it to be open to admit pure air, and let out contaminated air, could you with comfort, could you without continued apprehension, open the windows of your own house, though at a greater distance than the windows of the proposed fever-house are to the windows of the gallery, and the wards of the Infirmary?

I am sensible I have presumed much in offering YOU a line to direct your conduct; but when I consider how much has been done to bias your judgment in this matter, I trust you will forgive my efforts to place every thing before you in its true light, and to enable you to give your verdict; for you are, on this important point, both THE JURY AND THE JUDGE.

J. WOOD, M. D.

ADDENDA

TO THE

COMMUNICATIONS.

(SEE PAGE 118.)

Copy of a Letter to Dr Currie, from Dr Bostock, inclosed in a Letter to Dr Clark.

Liverpool, August 1, 1802.

Dear Sir,

AT your request I send you a few observations upon the state of our fever-wards in the workhouse, particularly in respect to the connexion which the patients in them have with the other inhabitants of the building.

When persons affected with fever are brought to the wards, they are generally conveyed in a coach to the side door, communicating with the yard; here they quit the carriage, and are taken across the yard and area of the building to a small chamber, which we call the receiving-house. In this place they remain until the next visit of the physician or apothecary, who then examines into their situation, and if he find the case to require it, remits them to the ward. In the yard and area, there are at all hours of the day, a number of persons, particularly children, walking about, among whom the patient must necessarily pass, in his road to the receiving-house, and during his continuance there, it is pro-

bable that the communication with the rest of the house is not altogether prevented.

The fever-wards are situated on the third story, and above them is the nursery, where the children belonging to the workhouse sleep. The same stairs communicate to both these places, and, as many of the children are unemployed, a considerable number of them are generally found playing upon the stairs, and about the door of the wards; and in spite of the injunctions which are given, there is reason to suspect that some of them occasionally enter into the ward themselves. The nurses have very frequent communication with the other parts of the house, and we are frequently in the habit of permitting persons who reside in the town, to visit their friends who are in the wards.

From the circumstances which I have now pointed out, it might be supposed, that the patients received into the workhouse, would almost certainly communicate infection to the other inhabitants of the building, particularly the children; and yet, upon strict examination, this does not appear ever to have been the case; indeed the confidence which we feel upon this subject, is the reason why more precautions are not used.

About two years ago, a very alarming fever broke out in the nursery, by which no less than 67 children were infected. The source of this disease was, however, clearly discovered; a family residing in a cellar in one of the most confined parts of the town, was sent in a state of fever to the work-house; the parents were placed in the wards, but by some neglect, the children were sent into the nursery, with some degree of the disease upon them, and without removing the infected clothes which they had worn before they came into the house.

In the fatal period of last autumn, when the number of patients so very far exceeded their usual proportion, and when many of the cases were so unusually severe, I did not hear of any instance, in which the disease was communicated from the wards to the other parts of the house. There is, indeed, reason to imagine, the people in the work-house enjoyed better health than an equal number of people in any one district in the town.

The only circumstance which seems to contradict my remarks is the case of the master of the work-house, whose illness and death occurred about the period to which I allude. But from the information which I was able to receive at the time, his fever was apparently induced, not from any infection derived from the wards, but from some very advanced cases upon their first reception into the building, and while they remained with their infected clothes still upon them.

Whether it should be ascribed to the complete ventilation of the rooms, together with the elevated situation of the building, I shall not attempt to decide; but it is certain, that from some cause, the typhus contagion has its virulence very much mitigated by being taken into the work-house.

I am,

Yours respectfully,

J. BOSTOCK.

Copy of a Letter to Dr Clark, from Jas. Currie, M. D. F. R. S.

Liverpool, August 5, 1802.

Dear Sir,

To the great mass of evidence and authorities which is already adduced in favour of the plan of receiving fevers into the new building attached to your Infirmary, I can scarcely consider any addition as necessary; but as the experience derived from our fever-wards here is now of fifteen years duration, and as it may bear more or less on the important question at present agitated with you, I am happy to comply with your desire in giving you a more full account of it.

In the report of your committee is republished an extract of a letter of mine to Dr Percival, dated May, 1796. I there mention, that for five years and an half we had received patients in fever into the Liverpool Infirmary, and for the greater part of the time, into two small wards on the ground floor of the left wing. The patients were on the general establishment of the charity, and had their food and medicines provided in common with the other patients. They entered into the yard of the wing by the same large folding doors which admit all the other patients; but the fever cases were afterwards conveyed into these two wards directly, without using the common stair-case of the wing. Immediately over them, however, were the wards of the other patients, and it was impossible to seclude the nurses of the fever-wards entirely from communication with the other servants of the house; yet, in no single instance was the contagion extended to the contiguous wards. I have also mentioned, that at the end of five years and a half the place for the reception of fever was removed from those small and ill constructed wards, to two large and airy wards

in the centre of the work-house, a description of which is given. Four years had then elapsed from the commencement of that arrangement, during which time there was no reason to believe that the contagion had, in any instance, spread from the fever-wards to the rest of the building. Six years more have since elapsed, and, on the strictest enquiry, I find that the same assertion may be made up to the present day.

In order to point out the nature and value of this experience, I must be more precise and minute than is agreeable, and must even repeat some particulars in my former letter.

Our work-house is a very large building, which sometimes has contained 1400 persons, and which is in many respects very imperfectly constructed. The great door in the centre of the building opens immediately into the great dining-room, but is never used. All the persons who enter the house, sick or well, pass through a small door in the right wing, seven feet high by about three feet and a half in width, where a porter constantly stands to prevent the exit or entrance of the inhabitants, excepting under the rules of the house. The sick are received at this door, whether labouring under fever or not, and are carried across a passage to a receiving house, of which there is one for each sex. Here they are stripped and washed, and their clothes exchanged; the apothecary examines them on his daily visit, and sends those under fever to the fever-wards. The access to these wards, is, as I formerly mentioned, thro' the common stair-case of the centre of the building. On the ground floor is the great dining-room, the access to which, from the rear, is thro' the area at the foot of this stair-case. On the next floor, is the lock hospital for females; on the third floor, the fever-wards; and on the fourth, the children's nursery.

For the ten years in which the wards have remained in this situation, there has been no contagious fever in the lock-hospital. But two years ago, a very alarming fever broke out in the nursery, and extended to no less than 67 children, all of whom recovered by the early application of the usual remedies, of which early and frequent ablutions formed the principal part. This might be supposed to have originated from the fever-wards below,—but, on inquiry, it was clearly traced to another source, as you will see by the letter from Dr Bostock, the attending physician at the time, a man of great accuracy. Except, in this instance, contagious fever has been unknown in the nursery, where the apartments are clean, spacious, and well-ventilated, being at the top of the building, and the children have the appearance of health and vivacity.

Whatever your sentiments may be respecting the narrowness of the sphere of contagion, I think you would not have ventured to predict such a singular exemption from fever, under such circumstances. For the children are continually passing up and down the stairs, and playing in the stair-case; and, at particular times of the day, that is, immediately before dinner, they are crowded towards the bottom in a singular manner. The fact is, their food is distributed to them from the dining-room, where a great body of the people from the wings of the house dine; and as the doors open at a certain hour, a great crowd collects previously at the bottom of the stair-case, and in the area below, struggling for admission. While I was thus examining this ill-constructed stair-case, which is never clean or sweet, about two years ago, a patient, under fever, was brought across the court, a little previous to the dining hour. I followed the patient up into the ward, and counted exactly 83 children on the stairs, within three or four feet of every one of which, the patient must have passed, and some much nearer. On

mentioning the circumstance to the nurses, they seemed to think it nothing uncommon, but as what might happen any day. Though no clear instance of injury arising from such occurrences can be brought, I have always deprecated the circumstance which leads to them, and in conjunction with others of my brethren, urged, in the parish committee, the propriety of having a distinct passage to and from the fever-wards. Various consultations were held on this point, but the structure of the building rendered such an alteration impossible, without entirely defacing the front, and the want of any actual proof, or even appearance of injury from using the common stair-case, cooled our zeal. The probability of a separate house for fever, from the inadequacy of the present wards, rendered it less necessary to press the alteration, and the proposal is at length happily superseded by the actual erection of such a house now in rapid progress.

The fever-wards themselves, though very far from being sufficiently extensive, are admirably ventilated, and, on the whole, very happily conducted. The nurses still live in these wards, night and day, their apartment being in the centre between them, and open at the top to the air of both, as described in my letter to Dr Percival, already referred to. In the course of ten years, several of them have caught the contagion, but assistance being immediately had, one only has died, so far as I can learn, a woman upwards of sixty, and otherwise very infirm.—In the instances where the contagion has been thus communicated, it has been to nurses newly introduced. They have seldom been, any of them, affected more than once; their constitutions acquiring, by habit, insensibility to the contagious impressions. I mentioned to you, that two of the present nurses have each of them a child actually living with them in the wards, and going out to school in the day. These children appear neat, clean, and healthy, though they sleep in the very cen-

tre of the patients every night. Their mothers were convinced they were not liable to any injury, for they never came into contact with the patients, and they seemed to think they should be themselves perfectly safe, if it were not that they are employed in offices that oblige them to be often, and sometimes for a considerable time together, in contact with the sick, and exposed to the undiluted exhalations from their skin and their lungs.

Experience has, however, taught them to estimate even this hazard very lightly; and it is, in fact, as easy to get a nurse for the fever-wards, as a servant for any other part of the house. This exemption of the nurses from contagion, (a few instances excepted) is to be attributed not merely to the ventilation of the wards, but to the singular cleanliness of the patients, on every one of whom, in whatsoever stage of the disease, complete ablution is performed in one form or other, at least once every day; this being done where the fever is high, and the heat considerable, with water perfectly cold; and where the strength and heat are reduced, with water tepid or even warm, and sometimes mixed with vinegar or sea salt. The methods of Morveau or Carmichael Smyth, have never been practised in these wards, or in the former wards of the Infirmary; and our experience seems to decide, that the proper use of pure water and pure air, may wholly supersede them.

To the practice of completely washing and changing the patients in the receiving houses, before they are carried up the great stair-case, I attribute the extraordinary circumstance of the contagion never appearing to be communicated to the bye-standers in this narrow passage, of which a melancholy and striking circumstance has impressed conviction on my mind. Notwithstanding the healthfulness, and especially the exemption from fever, of all the places in the in-

mediate vicinity of the fever-wards, in the year 1801, the master and mistress of the house, and a young woman, daughter of the assistant mistress, were at different times affected with typhus, and all of them died. This circumstance occasioned great agitation. The master of the house had never been in the fever-wards, the mistress very seldom; and they lived in a part of the building very remote. But Miss Nickson, the young woman alluded to, had, it was found on inquiry, been incautiously turning over the linen from the fever-wards before it had been steeped in water, and to this circumstance her fever was imputed*. In all

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* Lest the fate of the master and mistress of the poor-house, and of Miss Nickson, should be quoted against the proposal of admitting fevers within the building lately annexed to the Infirmary, the Editor thinks it necessary to make some remarks on their cases. It is evident, that if they are admitted as arguments against the reception of fevers into the new *distinct* building, they must be allowed to militate as strongly against a house of recovery in any other place. In either situation, the patients offering for admission, must be examined by proper persons, and the inadvertence of turning over the linen before it had been steeped in water, is not more likely to happen in one situation than the other. As to danger to the patients, there is no ground to infer any, as the disease did not spread. These cases afford, on the contrary, the strongest proof of the efficacy of cleanliness and ventilation, in stopping contagion, and of its limited range. The master and mistress of the poor-house fell victims to fever in consequence of examining great numbers of the poor in their room, when the poor were unwashed and in their own clothes: from the same poor, when admitted, no infection spread, because the wards were ventilated, and their bodies washed, and clean articles of clothing given them. Again, the infected poor were regularly set down within a foot or two of the window of their parlour, yet within that very limited distance, the infection had never been communicated to its inhabitants.—*Editor.*

the three cases (one of which only I attended) the disease proceeded insidiously, and was scarcely suspected till it was too late. But how, you will ask, does the case of the master and mistress apply to the opinion I have given on the benefit of ablution in preventing contagion? I have before mentioned, that all persons sick or well, and the patients under fever among others, enter the work-house by a small gate in the right wing. This gate is close by the apartments of the master and mistress, that they may have this important pass immediately under their eye. In fact, the window of their parlour is on the outside of the gate, and within the distance of four feet, and the door of a coach, bringing up a patient under fever, must, from the narrowness of the passage, be within a foot or two of this window. Here the patient is taken out and carried through the door, and generally examined by the master or mistress in the inside. In the year 1801, in this great town, there were admitted, on the books of the Dispensary, nearly 6000 patients beyond the usual number; from 12000 they increased to 18000; and typhus fever was extremely prevalent: Of course, the distress of the poor was great; there was an unusual pressure for admittance into the fever-wards, which were filled beyond all former precedent, and many were obliged to be sent away. The examination of these unhappy persons in their unclean and contagious state, unwashed and unventilated, and the rejection of them when necessary, devolved on the master and mistress, attentive and humane persons, who doubtless fell victims to this dangerous and painful duty. This is the opinion of their successors, Mr and Mrs Hall, who assure me, that they make a point of never approaching within a yard or two of suspected fevers, and have hitherto escaped. The porter, who has opened and shut this gate for several years, has escaped also. He assures me, that he has used the same precaution; but he inclines to ascribe much of his safety to the use of tobacco, of

which he chews very large quantities. The persons employed in washing and cleansing the clothes of the patients, in the receiving houses, have sometimes been affected by fever; but being on their guard, and applying for assistance in time, fatal consequences have, I believe, never ensued.

The striking advantages of external ablution, both as a prophylactick and a remedy, have engaged our particular attention in the construction of our new fever-hospital. Before the patients enter into the body of the building, they pass by an entrance peculiar to themselves into a vestibule, where there are baths of every kind, where they are stripped of their foul clothing, washed, and clothed in the hospital dress, and thus purified and refreshed, removed into their proper apartments. In the plan which you had the goodness to show me, I believe there is a provision of the same nature; and if not, I would submit the propriety of superadding something of the kind, not for the safety of the patients in the adjacent wards of the Infirmary, but for the benefit of the fever patients themselves, and their immediate attendants. For as to any danger to the patients of the Infirmary, from the mere proximity of the walls of the fever-house, while you enter by distinct passages, and observe the usual and obvious precautions, the details which I have given you will show you that it is impossible for me to listen to it for a moment, even if the uniform experience of the Physicians of Liverpool were not supported by that of every other part of the island, where it can fairly be collected. Nothing, indeed, seems to be more firmly established than the narrow sphere of even the most virulent contagions, where the air is allowed to circulate freely. Hence, in the torrid zone, where the heat of the atmosphere in a manner forces ventilation, the infectious quality of the most malignant fevers is a matter of dispute among the faculty,

though I believe with yourself and Dr Wright, (the present worthy President of the College of Physicians at Edinburgh) that, under a similar deficiency of ventilation, they would be equally or more infectious than the fevers of our northern latitude. Dangers that cannot be calculated, are always magnified by the imagination; and the baleful influence derived to the atmosphere, from taking its constant course over extensive swamps of many thousand acres of putrifying animal and vegetable matter, has been loosely applied to the same air passing over a human body, for a thousandth part of the time, and a millionth part of the surface. Yet the testimony of all actual observers, in every region of the earth, is calculated to correct this error. Even the sphere of contagion of the plague, the most terrible of the diseases which affect the human species, seems limited to a very few feet, or even inches, in a free circulation of the air; and it might be received into your projected fever-ward with safety to the patients of the Infirmary, if we may believe the concurrent testimony of Savary, Bruce, Russel, and of Antes, the most recent and satisfactory of them all.

It is folly to pretend that this subject is of a professional nature, and not cognizable by any fair understanding. The facts are numerous,—the inference easy. It is only necessary for unprejudiced men to make themselves masters of the first; the last, seems to me, inevitable. Even those who will not take the trouble of obtaining the information necessary to inform their own judgments, might regulate their conduct safely by conforming to the usual maxim on similar occasions,—that of adhering to the opinion of those who are likely to be best informed. That persons, the business of whose lives is to observe and to combat the effects of contagion, should be best acquainted with its laws, and their evidence best entitled to weight, in a question depending on those laws, are propositions that no one will dispute; and

the force of which can only be eluded by shewing that, in the point at issue, they have an interest likely to pervert their judgment or their evidence. But what peculiar interest have the faculty in institutions for the prevention of disease, unless, indeed, the honourable reputation they may derive from serving the community? What interest have members of the faculty, already in the possession of public confidence, in committing their reputation to hazard in the support of plans of a dangerous nature? If such plans succeed, their effects cannot be concealed; and if they turn out to be such as their opposers prophecy, they must destroy the reputation of their supporters.

To stifle a measure of this kind in its progress, is indeed to prevent the question from coming to issue. But it has already been decided at so many other places, and is likely soon to be tried at so many more, that Newcastle cannot long resist the general conviction. In the mean time it seems to me, that those who, from indolence, from ignorance, or from prejudice, prevent the public from receiving the benefit of the fever-wards attached to your Infirmary, unless they establish some institution of equal value, will have a heavy responsibility on their minds,—responsibility for the lives that might have been saved, and for the misery that might have been prevented!

In one point of view it is perhaps fortunate for the world that the controversy at Newcastle proceeds to such a length. The subject will undergo a complete investigation, and the combat you are maintaining will, in the end, I have little doubt, decide the question, not for Northumberland only, but for every part of the kingdom where it still remains undecided. That much interest will attach to your proceedings, not at the present moment merely, but in future times,

I entertain little doubt. In this and in every view of the subject, I have great pleasure in ranging myself on your side, and in staking, with confidence, what little character I have upon the issue.

With every sentiment of respect and regard,

I am,

Dear Sir,

Your faithful friend and servant,

J. CURRIE.

OPINIONS

OF THE

PHYSICIANS and SURGEONS to the INFIRMARY,

RESPECTING THE

SAFETY OF OPENING THE FEVER-HOUSE FOR GENERAL RECEPTION.

RESOLUTION OF THE COMMITTEE.

RESOLVED,

That the Physicians and Surgeons of the Infirmary be requested to send to the Secretary, sealed up, on or before Wednesday, the 23d of June, their opinions on the following point:— Whether there will be danger to the patients in the other part of the Infirmary from a general admission of fever patients into the fever-house, either upon the supposition that the only communication between the two buildings remains open for the convenience of admitting patients from the old house by means of a double door, or is walled up. And that the attendance of the Faculty, at the meeting, on Thursday the 24th, at half past ten o'clock, be particularly requested.

OPINIONS, &c.

DR CLARK'S OPINION.

June 24, 1802.

I am decidedly of opinion that the fever-house cannot extend infection to the Infirmary, either upon the supposition of the door being kept locked, or being walled up.

Every patient, before he enters the fever-ward, will be bathed, his infected clothes taken off for purification, and an hospital dress given him. He will be put into a clean bed, in a large airy ward, which only holds six bedsteads. The effluvia arising from the bodies of the sick will be constantly diluted with pure fresh air. All the discharges from the bodies of the patients will be immediately received into cold water, and carried out of the wards. All dirty clothes and linen will be immersed in cold water, before they be carried out of the wards, and be afterwards washed with hot water.

The nurses who attend the house for fever will have a glazed linen wrapping gown, when employed in offices which require contact with the patients. And the pupils who dress blisters, &c. will have a glazed frock, to be kept at the fever-house.

With these precautions no contagion can possibly be carried from the fever-house, nay it will be so diluted as to be rendered innoxious to the very nurses. These are not mere assertions, they are deductions resulting from long observation and experience, and they are confirmed by a body of evidence presented to the Governors from the most respectable *medical authority*.

JOHN CLARK, M. D.

DR RAMSAY'S OPINION.

Newcastle, 23d June, 1802.

GENTLEMEN,

NINE years ago I called the attention of the medical society of this place, to the deplorable condition of the poor, when affected with contagious fever; their sympathies were awake to sufferings confirmed by their own observation, and they unanimously joined in recommending the establishment of a fever-house, as the only likely means of combating, with success, this fatal malady. In the sketch which was read, I suggested the propriety of annexing it to the Infirmary, and urged the advantages of such an union; but the then limited size of the house, and the impression of the rigid adherence of old establishments to the *letter of their institution*, led us to expect readier countenance from the more recently formed Dispensary. A committee of nine* members had a conference with the Governors of the Dispensary; but tho' they were cordial in support of the measure, the burthened state of their funds deterred them from giving it their sanction and support.

The years which have intervened, have brought before me additional scenes of misery, and deeper conviction of the utility of such an institution. The light too which has been recently thrown upon the subject of contagion, confirms me in the sentiments which I then entertained, that well-regulated fever-wards might be annexed to hospitals with perfect general security. But the body of evidence on this point,

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* Dr Wood, Dr Stevenson, Mr Leighton, Mr Horn, Mr Anderson, Mr Keenlyside, Mr T. Leighton, Dr Ramsay.

now before the Governors of the Infirmary, is, in my opinion, amply sufficient to remove the doubts of every candid inquirer. The vague and undefined dread of contagion, when it once seizes the mind, knows of no limits. Security is not felt at the distance of furlongs or miles. But calm and resolute inquirers have ascertained, for every useful purpose of general security, its natural boundaries. The æra of the cultivation of all physical science, by simple experiment and observation, has but lately commenced; and medical men have only of late availed themselves of this, the only rational path to the successful practice of their art. Hypotheses, at one period, solved ever difficulty; and to invent causes, was more honourable that to detect them: To this source, may be traced the belief of contagion being wafted by the wind from kingdom to kingdom; a doctrine which, unfortunately, having survived more harmless absurdities, has tended to keep alive the prejudices of the vulgar, and addressing itself to the *fears* of the more judicious, has interrupted the execution of some of the best plans for relieving human misery. If the bare possibility of risk to the sound, were admitted as a sufficient plea for neglecting the support of institutions intrinsically excellent, no hospital for the reception even of "the sick and lame" would, probably, at this time have existed for the relief of the wretched. No hospital for the small-pox would have been permitted, even in the suburbs of a city, for the air might waft, or the nurses might carry the poison of infection. We listened to the *powerful evidence* of the safety of variolous inoculation, when the shouts of PREJUDICE, as unfounded as they were loud, proclaimed the danger. We have gained in a slighter contest, (thanks to the progress of calm inquiry) the unspeakable benefit of *vaccine inoculation*, in spite of the ravings of this enemy to human happiness, and we have gained it by the irresistible *force of evidence*.

I am decidedly of opinion, that the fever-wards may be opened for the general reception of fever patients, without danger of spreading infection, *because* the mere proximity of one house to another, increases not the risk of communicating contagion. *Because* the infecting distance of contagious matter being now established, and placed nearly on the footing of any other philosophical fact, the laws by which it is regulated may be acted upon as positive truths. *Because* unprejudiced minds, availing themselves of such laws, have given us demonstrative evidence, on a large scale, that, with simple restrictions, fever patients may be received into Infirmaries with complete general security. *Because*, relying on such evidence, so consonant to my own experience, that *danger* cannot in speculation be true, which is false in fact.

JOHN RAMSAY, M. D.

DR STEAVENSON'S OPINION.

Hanover-square, June 22, 1802.

GENTLEMEN,

MENTAL distress, in consequence of the dangerous illness of my nearest and dearest connection, and constant attendance on her, have deprived me of leisure to collect and state for your inspection, my observations on the laws of contagion during a practice of 24 years, in which I have attended camp, hospital, and prison fevers, puerperal, scarlet, and other fevers, in England, Scotland, and Wales.

I am of opinion that, although contagious miasmata do not travel far upon their own legs, yet, like a bur, they ad-

here to, and stalk abroad upon those of people who come within their sphere of action, and that sufficiently undiluted to generate disease. Also that nothing but a perfect line of separation, both of house and airing grounds, by a wall, will give hopes of preventing the introduction, by the nurses or others, of contagion into the other wards of the Infirmary, if those on the west of the new building are appropriated to the general reception of patients under contagious fever.

I am,

Gentlemen,

Your most obedient servant,

R. STEAVENSON, M. D.

MR ABBS'S OPINION.

Clavering-place, June 24, 1802.

GENTLEMEN,

I am decidedly of opinion that the patients in the Infirmary are not in danger of contagion from the contiguity of the fever-house, under the regulations by which it will be conducted. The facts of the limits of contagion, and the good effects of fever-houses, having been laid before you, from such undoubted authorities, it appears to me unnecessary, at present, to say more on the subject.

I am,

Gentlemen,

Your obedient servant,

RICHARD B. ABBS.

MR INGHAM'S OPINION.

Newcastle, June 23, 1802.

SIR,

FROM my own experience, from the observations of others, and all the facts I have read concerning contagion, I am satisfied the establishment of a fever-house at the west end of the new building, for the reception of contagious fevers in general, will expose the patients of the Infirmary to the hazard of infection.

I am,

Sir,

Your obedient servant,

WM INGHAM.

MR KEENLYSIDE'S OPINION.

Newcastle, June 18, 1802.

DEAR SIR,

FROM the situation and plan of the new fever-house, I should not apprehend that either the patients or servants of the Infirmary run any risk from contagion; with best wishes for the success of your valuable institution,

I am,

Dear Sir,

Yours, &c.

RICHARD KEENLYSIDE.

MR HORN'S OPINION.

Newcastle, 23d June, 1802.

ON the question of the committee, respecting the general admission of fevers into that part of the new building annexed to the Infirmary, called the fever-house, *I am most decidedly of opinion, that it will be attended with danger to the patients in the other parts of the Infirmary, if such general admission takes place.*

I have formed this opinion, after all the attention I have been able to give the subject, from the conviction of my own mind, grounded on what I have heard, read, and seen; and without being biassed by prejudice against, or partiality for, the opinions of any man or set of men whatsoever.

The request of the committee was only, that the Physicians and Surgeons should give an opinion; but the various publications, anonymous and otherwise, which have been circulated in the form of letters, so universally, and, I think, in many cases so injudiciously, make it necessary that some reasons should be given, and some facts brought forward in support of those reasons which have induced me to form the above opinion. If I am more prolix than may at first seem necessary, I wish it to be understood, that I consider myself, in conjunction with my colleagues, implicated in charges, which I contend are ill founded; and therefore I request the attention of the court, while I endeavour to exculpate myself.

In the first place, I most solemnly declare, that I had not the most distant idea of any intention, to appropriate a part

of the addition to the Infirmary, to any other purpose than the reception of fevers, of *accidental occurrence*. These were the words held out to the public, and I understood them to mean, fevers accidentally arising within the Infirmary.

That no other idea prevailed at the time the foundation stone was laid by Sir M. W. Ridldey, there needs no other proof, than that he never named it. For if such a measure had been understood to be intended, would he not, in the eloquent speech he delivered on the occasion, have made some allusion to it? And I appeal to all who heard him, and to the reports published of his speech in the public papers, whether a hint of the kind was ever given? Let the secretary, let the whole building committee, let all the officers of the house be asked, to declare, upon their honors, whether they ever did, or did not hear a syllable of such a design at that time; and, I may add, for at least many months afterwards? If, as I am confident, the answer should be generally in the negative, those who now oppose the measure, must be acquitted of all the blame they would so justly merit, had they been so long privy to such intention, and only brought forward their objections, at the moment the building was about to be employed to a purpose they had long known it designed for. Such having been all along my ideas, there is no inconsistency in my opposition to the plan, of receiving fevers, not arising, or at first appearing, within the Infirmary.

The strongest ground on which those who favour the general reception of fevers argue, appears to me to be the weight they give to the opinion of Dr Haygarth, on the very limited extent to which, he thinks, the contagion of fever can reach. And notwithstanding all the attempts which have been made to reason away the objections which may be fairly brought against Dr Haygarth's ideas, I shall endea-

vour, by well authenticated facts, (some of them of the most public notoriety) to justify the opinion I have given. If I succeed in one instance,—if I can prove contagion ever to have spread its baneful effects from one human being to another, at far greater distances than Dr Haygarth has allowed it to be capable of extending, then must the advocates for the innovation, on the well-tried plan for conducting this Infirmary, which has stood the test of fifty years experience, and so fully merited the encomiums paid to it in Sir M. W. Ridley's speech, admit; I say, they cannot deny, that the diffusion of contagion beyond Dr Haygarth's limits is a possible circumstance, and I hope to shew, a probable one too.

At the Assizes held at Oxford, in the year 1577, a putrid effluvia, arising from the prisoners at the bar, infected a great part of the court with a pestilential fever, of which upwards of 300 people died.

Another very melancholy instance of the fatal effects of human effluvia, occurred in the year 1750, during the sessions at the Old Baily. At these sessions near 100 prisoners were tried, who were all, during the sitting of the court, either placed at the bar, or confined in two small rooms which opened into the court. The court house was crowded with people, great numbers of whom were almost instantly seized with the jail fever, and above forty died of it; but the most remarkable circumstance is, that those only were affected who were on the left hand side of the Lord Mayor, a stream of air being directed from the prisoners to that side of the room, in consequence of a window being opened on the other. All on the right hand side escaped; the putrid effluvia being wafted from them to the opposite side.

The persons of chief note who were in court at this time, and died of this fever, were Sir Samuel Pennant, Lord Mayor for that year; Sir Thomas Abney, one of the Justices of the Common Pleas; Charles Clerk, Esq. one of the Barons of the Exchequer; and Sir Samuel Lambert, one of the Aldermen of London. Of less note, a gentleman of the bar, two students, one of the under sheriffs, an officer of the Lord Chief Justice Lee, who attended his Lordship in the court at the time, several of the jury on the Middlesex side, and about forty other persons, whom business or curiosity had brought thither.—*See Heysham on jail fever, page 24 to 28.*

These two *undoubted facts*, are alone sufficient to overturn all that has been said on the *narrow limits* to which contagion is confined, in Dr Haygarth's idea of its operation.

But how many dreadful instances of its ravages, may be brought from the West Indies and North America, where the yellow fever has destroyed so many thousands, and where contagion has been spread to a distance far beyond the limits of this hospital, from effluvia arising from infected bodies, clothes, ships, &c. conveyed by the wind? My brother in law, Mr Renwick, of this town, and a governor of this Infirmary, has made twelve voyages to Jamaica, during the time when the sickness was most prevalent there; and being careful to moor his ship *to windward* of any other ship where he had reason to believe there was a contagious disease, and by confining his people to their own ship, he has never buried a man. Three other ships belonging to him, have gone to the same island, and by observing the same cautions, have been almost equally healthy; only two deaths having occurred from disease among all the people in his employment, nearly sixty in number. While in ships that

did not use the same precautions, the mortality has been dreadful. The Winchester, belonging to Captain Bruce of London, of which Mr Darnel of this town, was a part-owner, carrying eighteen people, entered the harbour of Port Morant, along with Mr Renwick, in high health, and brought up to leeward of the Henry of London, Captain Johnson, at about seventy fathoms distance. This last ship had been so severely afflicted with the yellow fever, as to bury ten, out of her complement of twenty men. She lay exactly to *windward* of Mr Bruce's ship, with her ports open to allow a free current of air; and the effluvia conveyed by these means, so affected the Winchester's crew, as to occasion the death of seven of them in seven days.

Nearly the same thing occurred in the ship Orion of London, Captain Cook, whose crew was perfectly healthy while she lay to windward of the Duckinfield of London, Captain Nickells, where the sickness raged, until, by accident, getting entangled with that ship, and to leeward only for a few minutes, until the ships were cleared from each other, the disease made its appearance, and carried off ten of her people.

It may be supposed, as these instances are not given by a professional man, that they do not deserve so much attention. Now, when I assert, that Mr Renwick is a man of strong sense and undoubted veracity, I have a right to claim the belief of the court to what he relates, were it only from the testimony of his own observations; but medical authority of high eminence is not wanting. Dr Dancer, a physician of the first reputation in the island, was consulted on the cases of these ships, and authorised the conclusions above stated.

Read the note at the foot of Dr Clark's circular letter, and see if his own quotation, from his own works, does not make

strongly for this argument, and shew *he* thought, that contagion would spread to a greater distance than Dr Haygarth's limits. " My attention (says Dr Clark) was struck by the *humane and wise conduct* of the commander of the Salisbury: by anchoring his ship at a *little distance* from the rest of the fleet, and allowing *no intercourse with sickly ships*, he preserved his crew in health at Bengal, in the year 1768."—*(See Dr Clark's letter, and also his observations on fever, page* 392.*)* —A further search into the Doctor's works, will still more strongly confirm this; for in his treatise on diseases of hot climates, pages 151, 252, no less than ten instances are given, in which even a common ague, a disease not generally supposed contagious, was found very highly so.

These facts shew that contagion extends much farther than the committee have been led to suppose; and indeed, if it did not, how can the wide spreading destruction caused by the yellow fever be accounted for? Surely when its ravages were so much dreaded, that in Philadelphia, even parents forsook their children when they were seized with this distemper, every known precaution would be used. And can it possibly be supposed that the disease could be diffused so very widely under such circumstances, if *almost* actual contact was required for its production? I think the supposition cannot be admitted; and if it is not, Dr Haygarth's opinion will not deserve that credit which it would otherwise be intitled to.

It would enter into too long a discussion to treat this subject as it deserves; nor would any but medical men be able to give due weight to the reasons which might be adduced on both sides of the question: I will therefore reserve what I may have to offer, if this matter should be agitated any further, before those whose professional pursuits must have best qualified them to decide on it: But any person, whether

of the profession or not, may easily conceive that contagion which has baffled all the art of the physicians of the West-Indies and America, is not a thing to be very easily controuled: And if this dreadful scourge of the new world is admitted to have spread its destructive effects, as I think it has been proved it has done, it should put us on our guard how we suffer any disease of a similar nature to be brought near this hospital; for all fevers, according to the best authorities, have a strong resemblance to each other; and Dr Clark has proved this in the book I have before mentioned.

Let any unprejudiced person read the works of Dr Lind, of Haslar hospital, whose opportunities of tracing infection have been superior to those of most men, and he will find by *what unthought-of ways* it may be communicated: Where a few infected blankets have been clearly proved to have cut off a whole nation of Indians: Where, when, as Dr Lind says, A SMALL SPARK of contagion, once introduced into a fleet, and by the sick from that fleet to the town of Brest and its vicinity, more that 10,000 people, besides 5 physicians, 150 surgeons, and 200 almoners and nurses, fell victims to its rage, with many slaves, who by a promise of their liberty, were engaged to assist the sick.——*See Lind on fevers and infection, page 323, and following.*

I myself know a physician, deservedly of the very first reputation, who has (if I am not very much misinformed) known infection to be conveyed 13 miles on a cake of gingerbread.

It may be said a thick wall may prevent its spreading, and no doubt, with the most vigilant attention and care, in ordinary cases, it might do so. But who can insure obedience to rules, however judicious, when so many unforeseen circumstan-

ces may lead to a breach of them? When a focus of contagion is placed close to the habitation of a number of people, peculiarly predisposed to receive it, what may it not be dreaded to produce? Will not the convalescents of both places be allowed to walk out, and can any one answer for their never coming near enough to propagate the disease, even in the confined limits allowed to its destructive powers by Dr Haygarth? If it cannot be indisputably shewn that all these ideas are chimerical, I think it cannot be right to make the proposed experiment of general admission of fevers to the Infirmary.

One Governor asserts, that the objections are brought forward by persons little acquainted with the laws of contagion. I answer for myself, and although I have not the presumption to place my knowledge on a par with Dr Clark's, as far as relates to contagion, I may fairly be allowed to state, what opportunities I have had of acquiring some *little knowledge* of it.—Dr Clark thinks a practice on board of ship of some consequence, by what he says in his letter, where he tells us it was his lot to enter into the sea service of the East India Company. He made two voyages, in a ship whose complement, including recruits, passengers, &c. was, as appears by the Doctor's book, 240.—It was my lot, also, to serve at sea, where, during seven years, that is, the whole of the American war, I was surgeon successively of the Medway of 60, Crown of 64, and Grafton of 74 guns. Their crews respectively were 420, 500, and 617 men. Three times I fitted out in London river, where, as is well-known to persons conversant in naval affairs, the great part of the crew is received from guardships, jails, and tenders, employed in the impress service. It therefore can hardly be doubted, but I must many times have had melancholy opportunities of witnessing the destructive powers of contagion.—I have practised in Newcastle since the 1st of Janu-

ary, 1783 (19 years), and it is well known among the faculty, that my share of employment among the poor, and those situated in the closest and worst ventilated parts of the town, has been considerable. I at one time was employed as surgeon to four different boxes or clubs, formed of keelmen and other labouring men, whose united numbers were near 300, and most of these having also families, it could not fail, but that when an infectious disease broke out in the neighbourhood of any of them, I must have seen something of it. I think then, without any imputation on my vanity, I may boast of having seen *much more* than the Member of the Building Committee, from whom I have this moment received a printed letter: Indeed, exclusive of Dr Clark, I cannot help thinking, I have seen as much of infection, or perhaps more, than any other member of that committee, or than any other Governor of the Infirmary. How I have improved myself by these opportunities, it is not for me to say; I only mention them to prove I am not talking of a circumstance to which I am an *absolute stranger*.

An anonymous Governor speaks of the laws of contagion, as if they were as clearly laid down, and as fairly and openly promulgated, as the statutes enacted by the King and Parliament: and letters from medical men are quoted to countenance the idea: They would act with more candour were they to confess they know little of the matter, beyond vague conjecture, and loose hypothesis. What do they know of the cause of small pox? Why should scratching the arm of a person, who had never had this disease, with a lancet dipped in the slightest manner possible into the fluid of a pustule on a cow's udder, for ever prevent his receiving this most loathsome distemper? Why should a person, from having once had the measles or the chicken pox, be for ever after incapable of receiving those disorders, however much he might be exposed

to them; and why do scarlet fever, typhus fever, and many other diseases, affect the same person more than once, notwithstanding the severity of the symptoms which may have accompanied the first attack? Until something like demonstration can be given on these subjects, never let the *laws of contagion* be mentioned. I believe it will obey no known law, but that of *banishment*, which should be enforced by keeping it as much, and as far as possible at a distance.

I fully admit the utility of a house of recovery for fevers, as an auxiliary to the Dispensary, whose peculiar province it is to treat these disorders, and for which purpose chiefly it was first instituted. But place this house where it ought to be placed—at a sufficient distance from any other house, to guard, as much as human prudence can guard, against spreading the disease it is meant to relieve.

The expense of such an institution cannot be great: That at Manchester cost but 200l. Its annual expense was but 400l. And as it is calculated that the parishes paying a sum with each poor person they send in, would more than support it, this last sum, for annual expenditure, would not be wanted.

If some such measure is adopted, it will answer all the purposes of the proposers of the plan for annexing a fever-house to the Infirmary, and will remove the objections of those who oppose it.—Were this expense considerably beyond what can ever be necessary for such an establishment, it would be a libel on the well known benevolence of the inhabitants of Newcastle, to suppose they would be backward in contributing to it. I have not a doubt but a sufficient sum would be subscribed in a day, if the measure was recommended with any degree of unanimity by those best qualified to judge of the advantages which would be likely to result from its

adoption. The public would then receive the benefits of a house of recovery for fevers, and the Infirmary would remain, what its founders intended it should be, and what Dr Clark in his useful Treatise on Fevers, &c. has so well shewn that it ought to be, a place* where fevers and other frequent and fatal distempers cannot with propriety be admitted on account of their infectious nature. But it should administer relief, says the Doctor, to those who suffer by accidents, and require the assistance of surgery, and to those who labour under such distempers as will admit of the removal of the patients from a considerable distance without injury.

FRED. HORN.

☞ Dr Wood did not deliver his opinion in writing, in compliance with the resolution of the committee, but referred the Court to his two Letters, addressed to the Governors of the Infirmary, as containing his sentiments on the subject.

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* Dr Clark's Treatise on Fevers,—Introduction, page 15, 16.

SUPPLEMENT.

In order to present the reader with a complete view of the subject, it will be necessary, in this place, to print the following papers.

DR CLARK'S CIRCULAR LETTER.

Newcastle, June 11, 1801.

SOON after the EXPLANATORY REPORT of the committee was circulated amongst the Governors of the Infirmary, I addressed several queries to the Physicians of various Hospitals and Infirmaries, with a view of being informed how far the MODERN PROPOSALS for improving these Institutions had been adopted, and with what success. By this procedure, I was in hopes of producing a practical confirmation of the utility of the improvements which have been introduced into the NEW CODE of LAWS, which is to be submitted to the consideration of the SPECIAL COURT, to be held on Thursday the 25th instant: And that every Governor may have it in his power to weigh the importance of the business to be then agitated, I have taken the liberty of presenting to him, previous to the meeting, the result of my inquiries.

I must beg leave to observe, that I claim no original merit for the assistance I afforded the Committee in framing the *Code*, nor for the improvements of the Infirmary proposed to-

wards the end of the following paper; my information having been derived from the publications of eminent authors, and the communications of my correspondents. From the works of Dr Percival, Dr Aikin, and the Committee of the Royal Society of Medicine at Paris, I received the most important information. As correspondents, I have great acknowledgments to make to the following eminent physicians, who have devoted their services to the improvement of their respective Hospitals and Infirmaries: Dr Cleghorn, Glasgow; Dr Rollo, Woolwich; Dr Currie, Liverpool; Dr Kerr, Northampton; Dr Walker, Leeds; and Dr Ferriar, Manchester.

From Dr Ramsay I have had great assistance; and also from the ingenious Mr Murray, surgeon; without whose aid I should not have been able, in time, to have prepared the following paper for the press.

I have the honour to be

Your most obedient humble servant,

JOHN CLARK.

Result of an inquiry into the state of various Infirmaries, with a view to the improvement of the Infirmary at Newcastle.

I SHALL begin with an account of those hospitals which have the best accommodations for patients, which are conducted upon the most approved plan, and which ought to be received as models.

The ROYAL HOSPITAL at Woolwich consists of a centre and two wings. The centre contains 16 wards, with *six* single bedsteads in each. The south wing is allotted to conva-

lescents, and has 8 wards, which contain 8 single bedsteads each. Besides these, it has several small rooms, for other purposes. The wards in the front building are distinguished into these for *sores*, *casualties*, *venereals*, *pectoral complaints*, *fevers*, and *miscellaneous diseases*. The apartments in the north wing are occupied by the surgeons.

Every patient, when his case requires it, is placed in a separate room. The galleries are large, and intersect each other. *Every window in the hospital, galleries, and wards, has a ventilating contrivance: About an inch and an half in each pane in the bottom of the upper sash is cut away: A frame with glass is set across the window, resting upon the top of the under sash, and fastened to it by hinges; and this frame can be moved on the hinges, so as to make a greater or lesser angle with the window, and consequently to admit more or less air at pleasure, rising towards the ceiling, and preventing it from falling upon the patients.* There is an aperture at the top, and several at the bottom of the door in each ward, with a slanting board on the inside to direct the air upwards. The doors of the ward open into the gallery, which runs through the centre of the building.

Thus this hospital enjoys the most complete succession of fresh air: But in cold weather it has also the advantage of being supplied with air of a proper temperature. By a peculiar invention of Mr Moser's, warm atmospheric air is conveyed, by means of earthen tubes placed perpendicularly, into the gallery of the first floor near the stair-case, and from thence into the wards by the holes in the doors. In winter, Dr Rollo, who has obligingly favoured me with much interesting intelligence respecting this hospital, finds this contrivance of great use to patients in pectoral and other complaints, when the temperature of the air ranges below 40

degrees. The temperature of air in a ward should, if possible, he observes, never be under 45, nor exceed 60, of Fahrenheit's thermometer.

The bedsteads are made of hammered iron, with sacking bottoms, and fold up; the bed and bolster are pilliasses filled with *oat straw*; the pilliasses and sacking bottoms are washed, and the straw changed once every month, or oftener, if necessary.

To this excellent hospital is attached a Medical Library.

From the 1st of January, 1796, to the 31st December, 1800, the total amount of the patients, in all diseases, admitted *into* the hospital, was 7526; the deaths 133, being one in 56 nearly; after deducting 1985 trivial complaints—one in 35. Fevers, and other infectious diseases, are admitted into this hospital. Of 27 fractures, simple and compound, one died; and of 22 amputations, two died.

The NORTHAMPTON INFIRMARY was rebuilt in 1793. It consists of 8 large and 7 small wards. The former are each 37 feet by 25, and 14 feet high. There are three windows on each side, in every large ward. In each of these wards there are 10 single bedsteads. The dimensions of the small wards are 17 feet 9 inches by 11 feet, and 14 feet high. Each of the small wards has one window opposite to its door, which opens into the passage, in which there is an opposite window. They each contain two bedsteads. The windows in all the wards are 7 feet by 3 feet 9 inches.

Immediately after every operation of consequence, the patient is put into one of the small wards, and one of the convalescent patients is lodged with him.

In medical cases, such as acute fevers, &c. where quiet and particular attention are required, the same arrangement is followed.

This Infirmary is capable of receiving into it, at one time, 94 patients, (and it is often full); viz. 80 in the large, and 14 in the small wards.

This excellent Infirmary was rebuilt under the direction of Dr Kerr, who formerly served in the Military Hospitals abroad; and who, having seen the ill effects of crowding patients together, and vitiated air, has completely guarded against it, in the construction of this house.

The annual average of in-patients is 650, and the deaths *one* in 31.

The proportion of deaths, after amputations and compound fractures, is certainly not *one* in 20; in fractures of the skull, not above *one* in 8; and, in simple fractures, he does not recollect one unfortunate event.—"In the old Hospital, *one* in 19 of the in-patients *(communibus annis)* died." *Percival's Letter to Dr Aikin.*—Such is the difference between good and bad hospital arrangement.

Leeds Infirmary.

The account of this charity I shall give in extracts from the communications of Dr Walker.—"This Infirmary has, in all, 17 wards; the two largest of which contain 11 beds.—Two wards contain 8, some 5, and the least wards 4 beds each. All these wards are 18 feet high. The two large wards, containing 11 single bedsteads, are each 42 feet by 15 feet 6 inches. The wards, containing 8 bedsteads each, are

33 feet by 18. The smallest wards, which contain 4 beds each, are 18 feet by 15.

"The large wards have 8 windows each; viz. one at each end, the rest nearly opposite to each other. The other wards have 6, 4, and 2 windows each; except one ward, which has one window only.—This Infirmary has also a *dark* ward, for patients who have been recently couched; and when they can bear the light, it is admitted by degrees.

"The House has beds for 128 patients; but the funds of the charity do not admit of more than 88 in-patients to be in the house at one time: For which reason, there are always wards unoccupied, if, on any emergency, a *separate room should be required.* It would be a real improvement, if the wards containing 11 beds were divided, not only for the sake of more free ventilation, but because the particular distress of individuals must render more disagreeable the situation of the other patients; and in case of accidental infection, such large wards are extremely inconvenient.

"It has not been the practice to separate the medical from the surgical patients, but the advantages are so evident, that it is my intention to propose it to the Board of Trustees for their approbation and adoption.

"The wards are ventilated by means of large circular apertures, placed near the top, which communicate with the great gallery, the doors of which open and shut at pleasure.

"As great attention is paid to cleanliness and ventilation in every part of the house, and to the perfect repair of the water closets, the air of the Infirmary is not in general much less pure and healthy than in private houses.

"There is an excellent Medical Library belonging to the Infirmary, supported by subscribers, both of the faculty, and others; but all the books purchased become the property of the trustees.

"This Infirmary was originally of smaller dimensions; but as the capital of the charity increased, it was raised a story higher.—It is a rule to change from one ward to another every two months. The patients who are able to quit their beds, dine in apartments fitted up for that purpose, and not in the wards.

"Of 619 In-patients, admitted during 1800, 22 have died, being one in 28."—In a subsequent communication, I am informed, that, from March 1799, to May 1801, thirty amputations have been performed, with the loss of a single patient only; that two or three patients with fractures are admitted every week; that there are seldom received into the house, in one year, more than 8 patients with compound fractures, (some of whom are immediately subjected to amputation); but not one has died of fractures of any kind during the last year.

Glasgow Infirmary.

The Infirmary at Glasgow, constructed as nearly as possible according to the report made to the late King of France, by a Committee of the Academy appointed to correct the faults of the Parisian Hospitals, consists of 8 wards, each containing 14 patients. To each ward are joined *four* small rooms; one of which is occupied by the nurse; and the other three are reserved for contagious diseases. They range along the passage to the water-closets,—and opposite to their doors is the door of the stair-case, forming a complete ventilation; and though the contagious diseases are

many, no patient has received infection since the erection of the building.

Although no accurate arrangement of diseases has yet been attempted, the Medical are separated from the Surgical patients, and contagious disorders kept apart with great care. If, from salivation or diarrhœa, &c. the smell becomes offensive, or noise from cough distressing to the rest, the patient is removed into a separate room, or into a corner of the ward.

The proportion of deaths, including infectious diseases, amounts to about one in 21; the proportion of deaths in fractures one in 20, and in amputation one in 12.

For the purpose of ventilation, the windows are placed directly opposite to each other; the door of each ward opens opposite the chimney, by which a current of air sweeps along the middle, without annoying the patients.

There are no projections in the walls, but lockers sunk under each window, for the use of the patients. To guard against contagion, the bedsteads are of iron, and without curtains; the bed-clothes often changed, washed, and aired; and cleanliness unremittingly adopted in every department.

Besides the stated quarterly meetings of the managers (24 in number), a Committee meet to examine the weekly occurrences, and give proper directions; a manager or contributor, under the name of a visitor, examines each ward daily, notes in the minute-book whatever he sees or hears, and attends the weekly Committee, who check every abuse, and adopt every improvement pointed out to them.

In the well-regulated INFIRMARIES of LIVERPOOL and MANCHESTER, they have adopted the method of dividing the Medical from the Surgical patients; and by means of wards of different sizes, they are enabled to separate those cases which are offensive from the other patients.——Both these charities have excellent libraries.

The INFIRMARY at NEWCASTLE was erected in the year 1751. It stands in an open, dry, elevated situation, at a convenient distance from the town, and from the river Tyne. The out-grounds for the patients, though small, are convenient, and command a pleasant prospect of the adjoining country. It consists of a front building and one wing, containing, in all, 7 wards. The largest ward is 76 feet by 20, and 12 feet high, with 23 beds. The next in size is 64 feet by 20, and 13 feet high, with 20 beds. Each of these wards appears to have been originally intended to have been divided, having two fire-places in each, one of which is shut up. Two wards, 33 feet by 20, and 12 feet high, containing 11 beds each: One contains 10 beds, 29 feet by 20, and 12 feet high: Two wards, containing 7 beds each; one of which is 21 feet by 20, and 9 feet high; the other, 20 feet by 15, and 13 feet high. The windows in the large wards are 7 feet 7 inches by 3 feet 10 inches; and in the attic story, 3 feet 9 inches by 3 feet 7½ inches.

Besides these wards, there are a few small apartments which might be conveniently occupied by particular patients, which at present are used as store rooms, &c. The ground floor, in the front, contains the chapel, governor's hall, a small consulting room for physicians and surgeons, together with an apartment 20 feet by 18½, and 13 feet high, serving the double purpose of a surgery and waiting-room for all the patients.—Great inattention has been shewn, in the original construction of the building, to the convenience of the

medical and surgical gentlemen. The surgeons must either examine their patients amidst a crowd of other patients, whatever be their complaints, or remove them to the shop, a place ill calculated for such purpose; and when the whole of the physicians belonging to the establishment happen to meet on the day of prescribing for the out-patients, the inconvenience and confusion attending the separate examination of four different patients in the same room have been often felt and regretted.—There is a passage the whole length of the front, with an entrance-door at one end, and a large window at the other, on the ground floor, and corresponding galleries in the stories above; but the galleries in the wing not intersecting those in the front, being closed up at both ends, and the water-closets being improperly placed, prevent a circulation of pure air in this part of the house.

The bedsteads are of wood, and badly situated, being placed with their sides againt the wall. Two of the wards are too large, and all of them too much crowded. From a combination of circumstances of this nature, notwithstanding the favourable situation, the air of the Infirmary, in the morning particularly, is impure.

The proportion of deaths, in all admitted for these last two years, appears to be one in 16. In fractures, compound and simple, for the same period, 59 have been admitted, nine of whom died; and in fractures of the skull, 6 have been admitted, 5 of whom died.

Having now ascertained the accommodations, together with the success of the practice, of as many of the improved Infirmaries as the limits of this paper will admit, I shall shortly contrast the result of their practice with that of some of the older hospitals.

In the great hospitals in London, of all admitted as in-patients, about one in 13 dies; in the Salop Infirmary, one in 11; in the Worcester Infirmary, one in 9; in the Old Northampton Infirmary, one in 14; and in the Newcastle Infirmary, one in 16: While, in the improved Hospital at Woolwich, only one in 35 dies; in the New Infirmary at Northampton, about one in 31; in the Leeds Infirmary, one in 28; and in the Infirmary at Glasgow, about one in 21, including infectious diseases. But the proportion of deaths, in compound fractures, fractures of the skull, and after amputation, marks more strongly the utility of ventilation, the advantages of different-sized wards, and the pernicious effects of vitiated air.

In the improved Infirmary at Northampton, the proportion of deaths, after amputation, and from compound fractures, does not amount to one in 20; and in fractures of the skull, not more than one in 8.

The town of Leeds being surrounded with coal pits, lime-kilns, and various manufactures, the accidents, of consequence, are very numerous. From March 1799, to May 1801, 30 amputations have been performed, with the loss of one patient only. Two or three patients with fractures are received into the house weekly; seldom more than 8 compound fractures in a year: But not one has died of fractures of any kind during the last 12 months.

In the Infirmary at Glasgow, the proportion of deaths appears to be about one in 20, from fractures; and after amputations, one in 12.

In the large hospitals in the metropolis, where numbers are crowded together, and where it will almost be impossible, with every contrivance, to preserve the air pure and un-

tainted, the success of amputation, of the treatment of compound fractures, or fractures of the skull, is much less than in the modern improved hospitals, plainly evincing that purity of air is essential to the fortunate event of operations, and that even increased skill and knowledge of the profession will not counterbalance the want of it.

In the Newcastle Infirmary, during the last two years, 59 cases of simple and compound fractures have been admitted, 9 of whom died, being in the proportion nearly of one in 6; and in fractures of the skull, 6 have been admitted, and 5 have died. And although it must be observed, that those who died of compound fractures, and fractures of the skull, were cases of the worst kind; yet more of them might probably have recovered in smaller and better ventilated wards.

It is to be regretted, that many patients are injudiciously sent from a distance, and received into Infirmaries, contrary to their established laws, some in a dying state, and others evidently incurable, because they appeared to the Governors objects of commiseration,—and are suffered to remain there, for the same reason, till they die. Such cases, no doubt, swell the list of deaths in many Infirmaries, and ought not to be admitted, as they preclude others from being taken into the house, who are proper objects of medical or surgical treatment.

Such is the difference in the success of the practice between old and improved Infirmaries, that no one can for a moment hesitate in ascribing it to *cleanliness*, *ventilation*, and *proper accommodations*.—I cannot allow that physicians in the Newcastle Infirmary are less skilful or less attentive than those of other Infirmaries; and with respect to the surgeons, I pay them no exaggerated compliment, when I

say their skill, dexterity, attention and humanity, cannot be exceeded.

I shall not at present enter further into the investigation of this subject,—but conclude, by referring those who wish for further information, to Dr Kirkland's Observations on Mr Pott's Remarks on Fractures, and Dr Aikin's Thoughts on Hospitals.

Proposed internal Improvement and Extension of the Newcastle Infirmary.

As the crowding together of patients, and inattention to cleanliness and ventilation, are the chief causes which affect the salubrity of air in hospitals, I shall state as briefly as possible, a few remarks on these heads, as referrable to the Newcastle Infirmary.

Contamination of air, arising chiefly from crowding, indiscriminately, too many sick people together.—I will propose that the long wards be divided, and the number of patients considerably reduced in every apartment in the house. The longest ward, at present containing 23 beds, when divided into two, ought not to lodge more than 9 patients each; and the ward containing 20 beds, having undergone a similar alteration, should not be occupied by more than 16 people. The wards which have 11 and 10 beds each, should be reduced to 7; and those containing 7 beds at present, ought only to have 4. A small room should likewise be set apart, near the theatre, as a dark ward, for the reception of patients after the operation of couching. It would also add much to the comfort and ventilation of the house, if a small room or two, in each story, could be fitted up for the purpose of dining-rooms for the patients.

By limiting the number to 63 instead of 89, and from different-sized wards affording a compleater separation of diseases, the purity of the air would be proportionably increased, and, by more speedy recoveries, the succession of patients unquestionably greater.

With respect to *cleanliness*, little more need be said in this place (being already taken notice of in the New Code), than that the bedsteads should be made of iron, to turn up in the day-time, with the heads against the walls, and the bedclothes removed; and where fixed water closets cannot conveniently be erected, Binn's portable water closets, answering the purpose very compleatly, ought to be adopted.

Ventilation.—In order to obtain a succession of fresh air in the apartments of the sick, part of the bottom panes of the upper sashes of the windows should be cut away, and a frame of wood or glass placed across, resting upon the top of the under sash, and fastened to it with hinges, so as to form any angle at pleasure, and prevent the current of air falling upon the patients. Apertures in the walls should likewise be made, corresponding with the windows in the galleries, and the window above the entrance door to turn on a swivel, forming, by this means, a complete ventilation. Although adequate supplies of fresh air are essential to its purity, yet the temperature must also be regarded, with a view to salubrity. To effect this purpose, stoves might be placed in the galleries in winter, or heated air conveyed into them by means of earthen tubes from below, and hence into the wards by the apertures in the walls, as in the Royal Hospital at Woolwich.

The above-mentioned alterations seem indispensably necessary in the present building; but should the Governors

see the necessity of erecting an additional wing, the following are the considerations principally to be attended to.—That the physicians and surgeons may fulfil the duties of their stations with comfort to themselves and advantage to their patients, it is necessary to provide them with proper accommodations. The inconveniencies arising from this neglect will readily be conceived, from what has already been said.—There should be 8 wards, each 17 feet 9 inches by 11 feet, and 14 feet high, containing 2 beds each, 1 for a convalescent and another patient; with one or two small rooms annexed, for the accommodation of the nurses. Each of these wards to have one window, placed opposite the door which opens into the galleries; in which there must be a window, facing the door of each ward. In the construction of the water closets, particular attention must be paid, to place them so as not to obstruct the ventilation.—By pursuing this plan, the fullest scope would be given for completing the improvements in hospital practice, the utility of which is so admirably illustrated in the accounts of the Royal Hospital at Woolwich, and in the Northampton, Leeds, and Glasgow Infirmaries. I cannot conceive that any scheme for accomplishing these ends, and extending the benefits of this noble institution, will be treated with neglect by its present supporters, or fail in being espoused by the public in general.

Having already exceeded the limits at first prescribed, I shall shortly sum up, under a few distinct heads, the result of my reflections and inquiries into the state of Hospitals and Infirmaries, which may be assumed as axioms for directing their improvements.

1. That the success, after compound fractures, amputations, and fractures of the skull, may in some measure be a criterion for ascertaining the salubrity of the air, and the na-

ture of the accommodations for the sick, in HOSPITALS and INFIRMARIES; and that, whenever the mortality is great in *these*, in internal diseases it will be proportionably so. By the present defective reports of Infirmaries, the mortality in internal diseases, viz. those that are *medical*, cannot be truly ascertained, because the frequently fatal termination of the diseases of many of those dismissed relieved, or made out-patients, is not known, and unnoticed in the reports.

2. The recovery of patients labouring under compound fractures, and accidents of the skull, requiring operations, is rendered doubtful, by their *previous residence* in crowded and ill-ventilated wards; and their being returned into the same apartment *after* operation, affords still less chance of a favourable termination.

3. That the treatment of diseases has been extremely successful, wherever a complete separation of patients, and an arrangement according to diseases in suitable wards, has been adopted.

My exertions on this occasion will, I hope, be attributed to no other motive than an ardent zeal to place this upon a footing with the most approved institutions, for relieving, in the most effectual manner, the distresses of the afflicted, and promoting the improvement of the science of medicine.

REPORT OF THE COMMITTEE FOR THE INTERNAL IMPROVEMENT AND EXTENSION OF THE INFIRMARY.

AT a special court of the Governors of the Infirmary, held on Thursday, the 25th Day of June, 1801,

Sir MATTHEW WHITE RIDLEY, Bart. M. P. in the Chair,

The following Governors, together with the Physicians and Surgeons of the Charity, were appointed a Committee, for the purpose of considering the expediency of the proposed internal improvement of the Infirmary, procuring plans of the proposed extension of the building, and estimates of the expense attending the same, and causing a report of their proceedings and opinion thereon to be printed and circulated amongst the Governors, previous to the anniversary meeting, on Saturday the 1st of August, 1801.

THOMAS BIGGE, Esq.
NATHANIEL CLAYTON, Esq.
THOMAS GIBSON, Esq.
THOMAS E. HEADLAM, Esq.
ANTHONY HOPPER, Esq.
WILLIAM LLOYD, Esq.
JAMES LOSH, Esq.
CHARLES OGLE, Esq.
Rev. Dr PROSSER.
ROBERT H. WILLIAMSON, Esq.
NICHOLAS WALTON, Esq.
Rev. JONATHAN WALTON.

Infirmary, Newcastle upon Tyne,
July 21, 1802.

Report of the Committee appointed to consider the expediency of the proposed internal improvements of the Infirmary, the extension of the present building, and the means of carrying these objects into effect.

Your Committee, in conformity with their instructions, having with great attention examined the internal state of the Infirmary, proceed to report their opinion on its defects, and on the most effectual means of remedying the same.

Whilst your Committee have to acknowledge the great attention which has been paid, with respect to diet, medicine, and attendance, it is with the utmost concern they have also to report the very defective accommodations and ventilation so absolutely essential to the recovery of the sick.

The principal cause of the contamination of the air in the whole house, appears to your Committee to arise from the long ward, on the ground floor of the wing, and from the ward immediately adjoining; which from their situation will not admit of being made convenient, well-aired rooms, and therefore ought to be applied to other purposes. The ground floors of the most approved modern Infirmaries, appear to your Committee to be more properly occupied by the Chapel, Physicians' and Surgeons' Room, Dispensary, and Waiting-hall for Patients; several of which conveniencies are wanting in the Newcastle Infirmary, though they must be considered as requisite appendages to every hospital.

By removing the necessary, substituting a water-closet, and opening the gallery at each end, your Committee judge the long ward, on the second floor of the wing, capable of complete ventilation, and if divided into three apartments, containing six beds each, of being rendered sufficiently commodious for the reception of patients. The adjoining ward, on the same floor of the wing, may be converted into a dining-room for the patients; and by making some apertures through the wall, directly opposite the window, the ward immediately above the dining-room may be made a comfortable apartment of three patients.

The wards in the front of the Infirmary, as well as the others, appear to your Committee to be too much crowded, a circumstance attended with serious ill consequences; and also, in the summer, from their southern aspect, to suffer from the heat of the sun. To remedy evils so prejudicial to the health and speedy recovery of the patients, your Committee would recommend, that instead of each ward containing ten or eleven beds, that the number should in future be limited to seven beds each; and that every window in these wards should be provided with strong Venetian blinds on the outside.

On the same floor, and opposite to the front wards, there are two small rooms, the one occupied at present by the apprentices, and the other as a dry store-room: these your Committee would recommend to be converted into wards, containing two beds each.

In order to obtain a succession of fresh pure air in every ward of the old Infirmary, your Committee would recommend that every window have the same ventilating contrivance as that used in the Royal Hospital of Woolwich, viz. an inch and a half of each pane in the bottom of the upper

sash cut away; a frame of glass placed across the window, resting upon the top of the under sash, and fastened to it by hinges; the frame moveable on the hinges, so as to make a greater or less angle with the window, and consequently admit more or less air at pleasure, rising towards the ceiling.—Apertures should also be made through the walls, into the gallery, in a line corresponding with the windows in each ward, having doors turning on swivels, and having also each a padlock, to prevent the patients from shutting them.

It is with regret your Committee have to take notice of the great inattention originally shewn to the comfort of the medical gentlemen, who have no proper accommodations for transacting their business; there being neither a Waiting-hall for the patients, nor a room sufficiently large for a convenient Dispensary. Your Committee would therefore suggest the propriety and the necessity of dividing and setting apart the ground floor of the wing for the above purposes, which, by removing an extremely offensive necessary in the gallery, would materially add to the accommodations, and to the better ventilation of the house. Besides the Governors' Hall and the Chapel, there are two other apartments on the ground floor, in the front, one used as the Physicians' room, and the other as a Surgery and Waiting-hall for patients; but which your Committee conceive totally inadequate to these purposes, and better adapted to a Library, and the house-surgeon and apothecary's parlour.

Having, to the best of their judgment, pointed out the defects, and suggested the necessary improvements, your Committee are decidedly of opinion that the air can never be kept pure, if more than fifty patients are admitted into the present building.

From the above arrangements it will appear that accommodations will be wanting for thirty-four in-patients at least, according to the present establishment of the Infirmary, and that separate rooms, for the reception of patients labouring under dangerous diseases, or after operations of magnitude, where perfect quiet and cool air are essential to their recovery, cannot be provided. Your Committee, feeling themselves most strongly impressed with the necessity of such apartments, propose the following extension of the building, in order to place the charity you support on a footing with the most approved Infirmaries; and without which they are convinced it can but imperfectly answer the ends of the institution, and the benevolent intention of its supporters.

In the construction of such a building, for the reception and accommodation of a great number of sick persons, the first great object of attention should be free *ventilation* and *cleanliness*, without which health cannot easily be regained; for, under the influence of disease, a larger proportion of fresh air is required to support animal life, than in a state of health; and should a fever of a putrid kind originate in an ill-ventilated apartment, crowded with beds, or be communicated by contagion, its effects cannot but be very serious and fatal, if no provision be made for lodging the infected in separate well-aired wards; or, at least, in such as contain but few beds. In order to avoid these and other evils, highly injurious to the health and lives of our fellow-creatures, your Committee are of opinion that whatever they recommend should have utility alone for its object; and, conformably to this idea, they now proceed to lay before you the plan which they propose should be adopted for the extension of the building.

The most eligible situation for the proposed erection appears to be in a direct line with the front galleries of the pre-

sent buildings; and by continuing the galleries, and giving the wards a northern aspect, not only a thorough ventilation to both buildings will be secured, but the inconvenience of heat in summer will be avoided; a matter of no small importance to the comfort and health of the patients.

To provide for the deficiency in the old house, it will be necessary, in laying out the new building, to construct five small wards, capable of holding two beds each, for the reception of patients labouring under diseases or accidents of danger, where *perfect quiet* and *pure air* are indispensable to recovery: and, for the convenience of patients who have undergone surgical operations of magnitude, it will be proper that these wards should be on the same floor with the *operation room*, that is, in the fourth story; and that there should be attached to them, a nurse's room, scullery, and water-closet.

The second and third stories are proposed to contain four wards, each twenty-five feet by twenty-four, and capable of holding six beds: these two stories also to be provided each with a nurse's room, scullery, and water-closet; and they will possess the great advantage of having ventilating cross galleries, calculated also to serve as dining-rooms. All the patients who are able to sit up, should remain in these galleries some hours daily; during which time the bedding should be purified, and the wards exposed to ventilation.

The basement story will be occupied by hot, cold, and vapour baths, laundry, and other necessary offices.

From this description it will appear, that the proposed new building will be capable of accommodating thirty-four patients, and the old part fifty, as already noticed, making the total sum of eighty-four. But as the Infirmary would still

be very imperfect without further accommodations, your Committee propose to set apart, together with a distinct wash-house for cleaning and purifying the patients' clothes, two rooms capable of containing six beds each, for infectious diseases of accidental occurrence, to which patients may be removed to prevent the contagion from spreading through the whole house; the ground floor of the same serving as kitchen and nurses apartments.

In order that the new building may enjoy a complete ventilation, your Committee would recommend that every window in the gallery and wards have the same ventilating contrivance as that before-mentioned.

And that this building may be supplied, in cold weather, with air of a proper regulated temperature, your Committee would recommend that the peculiar invention of Mr Moser should be introduced in the construction of the wall of the gallery in the basement story, by which, atmospheric air is warmed, by passing over a heated sand bath, and by the means of earthen tubes placed perpendicularly, conveyed into the first floor of the gallery, and from thence into the wards, by holes in the doors.

As bedsteads constructed of wood are prolific sources for the propagation of vermin, and as complete cleanliness cannot be effected in Infirmaries where such furniture is used, your Committee further beg most earnestly to represent the necessity of having all the bedsteads in the house made of hammered iron, with joints, to turn up in the day-time, and to stand with their heads against the wall. Some of the iron bedsteads, in every ward, should also have a screw, to raise or lower the back, for altering the position of patients when in a weak state.

The Infirmary, thus altered and extended, will enjoy all the advantages of the modern improvements. The ventilation will be complete; and the temperature of the air properly regulated in every state of the atmosphere. By abolishing the long and crowded wards, mutual misery and the multiplied causes of death will be in a great measure removed: and by constructing a sufficient number of small rooms, a proper separation of the sick, according to disease, will not only be effected, but every patient labouring under a dangerous distemper, or after an operation of magnitude, will have the advantage of a separate apartment, and consequently a recovery will be more certainly obtained.

To make your institution complete, a considerable expense will necessarily be incurred. The estimate for the new building amounts nearly to two thousand eight hundred pounds. But in a country of increasing population, and commercial importance, where the sources of opulence are various and abundant, and the feelings of humanity on all occasions remarkably indulged, your Committee entertain the pleasing hope that the present design, calculated to save the lives of the inferior but industrious orders of society, will be esteemed a work of real benevolence and mercy, and as such, meet with effectual patronage and support.

By order of the Committee,

THOS. BIGGE, CHAIRMAN.

N. B. The plans and elevation of the new building are laid upon the table in the Governors' Hall, for the inspection of Governors.

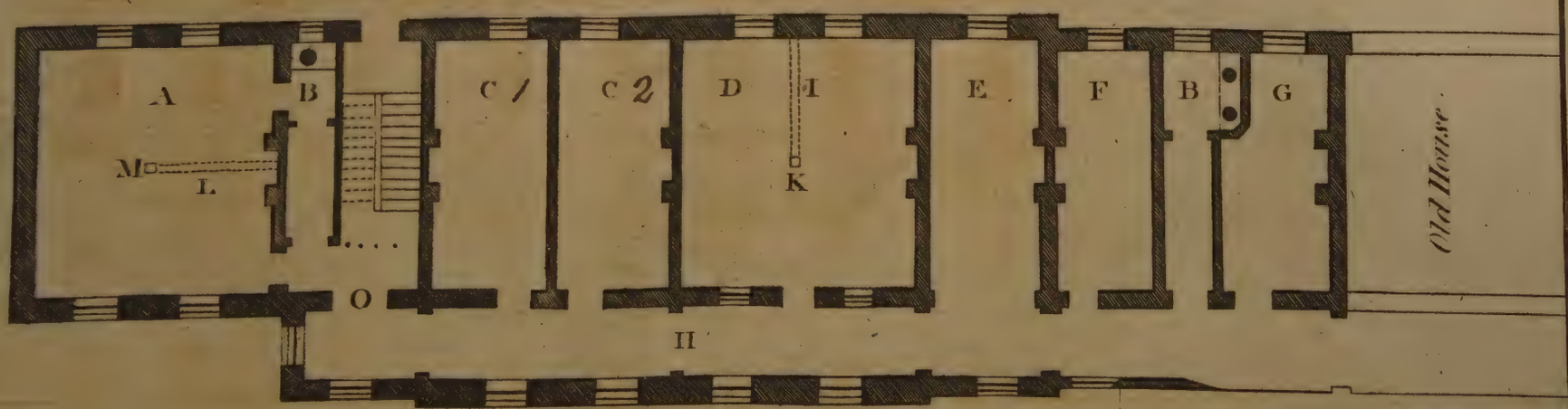
DESCRIPTION OF THE PLAN OF THE APPENDAGE OF THE INFIRMARY AT NEWCASTLE.

FOR the convenience of the patients, some deviations have been made from the plan. It was judged better that two small wards should be constructed on the ground floor, or second story, for the reception of violent accidents, instead of carrying them to the top of the house, where it was at first proposed to construct all the small rooms. In the house for fever some important improvements are also introduced.

The annexed plate contains the plan of the ground floor, or second story; and from it shall be given a description of the interior arrangement of the building.

The descent to the basement story is by the stair in the old house. This story is 11 feet high, and contains, under A, a dissecting room, 25 by 24 feet, with two windows to the south, and a large bow window to the west, and separated from the kitchen of the fever-house by a wall running in the direction of the dotted line. Under B, is the dead-house. Under C 1. kitchen to the fever-house. Under C 2. a room for receiving and washing patients, part of which is partitioned off for fumigating and purifying their clothes. Under D, E, F, and G, are the cold, tepid, hot, vapour, shower baths, and cellar for coals, to the new wards.

The *house for fever* has all the advantages of a distinct building. It has its own proper stair; a door on the north front; and a strong brick wall betwixt it and the other new part of the Infirmary. It has a door, at O, from the gallery of the Infirmary, for the convenience of removing patients;



PLAN & ELEVATION of the Appendage to the INFIRMARY at NEWCASTLE.

Old House

I. Stokoe Arc.t

but which will be afterwards kept locked*. It consists of three stories, with a water-closet at B in each. The ground and middle stories are 14 feet high, and contain one ward each, 25 by 24 feet, to hold six beds each. The upper story is also 25 by 24 feet, and contains six bedsteads, but is only 13 feet high. The garrets are 8 feet high, and the one above A, 18 by 14 feet; and on the opposite side of the stair, a wash-house; a room for drying the clothes of the patients; and other apartments. From this description it will appear, that the fever-house has its separate kitchen and baths, and that the whole of the garrets belong to it.

REFERENCES TO THE ANNEXED PLAN.

A. Fever-ward, 25 by 24 feet.

B. B. Water closets. The same in the two stories above.

C 1. C 2. Two wards, 25 by 12 feet, to contain each two bedsteads. The same in the fourth story; but in the third C 1. C 2. make one ward like D.

D. Ward, 25 by 24 feet, to contain six bedsteads. The same in the third and fourth stories.

E. Ventilating cross gallery, 25 by 12 feet, to answer also the purpose of a dining-room. The same in the third

* Before the decision of the Special Court, this was the only entrance from the Infirmary into the fever-house. But lately, by order of three Members of the Committee, after the rising of the board, a door has been made in all the galleries above.

story. But in the fourth story it is converted into a ward, with two bedsteads.

F. Ward, 25 by 9 feet, to contain two bedsteads. The same in the third and fourth stories.

G. Nurse's room and skullery, 25 by 11 feet. The same same in the third and fourth stories.

H. Front gallery, 6 feet 6 inches wide, with a large window at each end, formed of two parts; the upper consisting of two sashes, and the lower of two folding doors down to the floor. The approach to this gallery is from the stair-case of the old infirmary.

I. Tube for conveying fresh air into the middle of each ward.

K. Valve to open and shut the above tube at pleasure.

L. Tube for conveying the foul air of each ward up the chimney. It is supposed to run betwixt the ceiling and floor in each ward.

M. Valve of the above tube, placed in the ceiling, to open and shut at pleasure.

N. Part of the new building, intercepted in front by a part of the old Infirmary. The leaden cistern constitutes the roof of this part of the new building.

A

FURTHER ADDITION

TO THE

COMMUNICATIONS.

(SEE PAGE 186.)

I deem myself fortunate in having received the following letter just in time to be inserted in this little volume. The accuracy, the abilities, and extensive opportunities the writer has had for observations, are sufficiently known to the medical world, and the subject of contagion has long employed his attention*.

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* Dr Hunter read a most excellent practical Essay on the Jail Fever, before the College of Physicians in London, in the year 1785, and which was published in their transactions; from which I beg leave here to introduce the following extract:—" In several of the worst cases I have seen, (some of which have proved fatal) where the patients, being in better circumstances, were lodged in clean airy apartments, *I have never known an instance of their infecting those about them;* even when the patient was a married man, and his wife had slept in the same bed along with him, one or two nights after the commencement of the fever. In an hospital, in a ward in which there are patients ill of this fever, provided it be well ventilated, the patients with other complaints, in the same ward, are seldom infected. It would appear that there is no great power of infection in the

Copy of a Letter to Dr Clark, from John Hunter, M. D. (of London) Physician to the Army.

Brighthelmstone, August 13, 1802.

SIR,

I would sooner have acknowledged the favour of your letter, but in consequence of my being at this place, I did not receive it till a few days ago. My opinion perfectly coincides with that which you have given on the subject of the fever-wards, proposed to be attached to your hospital. That they will prove highly beneficial to the poor, that may be sick of fevers, can admit of no doubt; and that no harm can arise from them, either to the town of Newcastle in general, or the hospital in particular, I hold to be equally certain, provided care be taken to keep the wards clean, well ventilated, and not over crowded. Under your care there can be no reason to fear that any of these precautions will be neglected.

In scarlet fever, small pox, and measles, there is no security against infection, for such as have not had those diseases, but cutting all intercourse off between them, the other patients, and those who are ill of these diseases. The

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body *alone*, provided the air be not confined. The worst mode in which the poison can be applied, seems to be by the apparel, or bed clothes of the sick."

" This poison, so insidious in its attacks, and so formidable in its progress, is, in all cases as far as I have seen, easily overcome and dissipated, for nothing more is necessary than ventilation, by which it is diffused and rendered harmless.—*See Medical Transactions, vol.* 3, *p.* 352—358.

case is different in that species of fever called jail fever, hospital fever, and ship fever, and which is often prevalent in the confined, dirty, and ill-ventilated apartments of the poor in large towns, which is, I apprehend, the disease with which your fever-wards would be filled; and the danger of infection to others from it is, with proper precautions, either none at all, or altogether trifling. It has happened to me to see much of that disease in the course of five and twenty years. I have witnessed it in almost every situation in which it can occur; in the confined and crowded apartments of the poor; in military hospitals of all kinds; in jails; in poor houses, and workhouses; and on board of ships. If I am to speak from my own experience alone, the result in all cases has been the same; whenever the sick could be made clean in their persons, clean in their clothes and bedding, and could be placed in well ventilated, and not over crowded apartments, the infection has ceased, and the sick have recovered rapidly, without afterwards communicating disease to those necessarily employed about them as nurses, or indeed to those who had occasional intercourse with them. Being of this opinion, and having derived it from the most ample sources of experience, you will readily believe, that no evil can, in my judgment, be apprehended from the fever-wards which you propose to attach to your hospital.

If any thing should bring you to London, it would give me great pleasure to have the honour of your personal acquaintance, and I intreat you will believe me to be, with real esteem,

Sir,

Your most obedient,

And humble servant,

J. HUNTER.

After the practical proofs of the safety of receiving fevers at Edinburgh, Chester, Liverpool, Manchester, Glasgow, and Woolwich, *within* Hospitals and Infirmaries, supported also by the practice and principles of professional men of the highest eminence, in various parts of Great Britain, can any person doubt the perfect security of receiving such cases into the fever-wards *annexed* to the Newcastle Infirmary, which are constructed in a distinct and separate building?

THE END.

Newcastle, printed by S. Hodgson.

POSTSCRIPT.

JUST when the impression of the preceding pages was finished, I received the following communications from my much esteemed friend, Dr CURRIE, of Liverpool.

Letter to Dr Clark, from Dr Currie.

Liverpool, Aug. 24, 1802.

My dear Sir,

CONSIDERING that the case of the Infirmary of Chester applies, in every particular, to your Hospital, I thought Dr Haygarth's evidence might receive support from the evidence of my friend and kinsman, Dr Currie; who was united with him in the attendance of the Hospital fever-wards there, and shared with him in the original proposal of admitting fever cases into the Infirmary. The inclosed extends to 1800, —when Dr Currie resigned the Hospital in favour of his son; but the certificate of safety to the general wards of the Hospital, from the fever-wards, might have been extended to the present day.

I do not know whether it is noticed in any part of your proceedings, that in the London Hospitals, particularly St

Thomas's and Guy's, fever cases are admitted,—and so far from being kept in separate apartments, are distributed, in equal proportions, through the different wards; so little do they fear the propagation of contagion in a freely-circulating state of the atmosphere.

I shall not trouble you again on this subject, but shall wait the issue with great interest.

I am,

Yours most truly,

JAMES CURRIE.

Letter to Dr James Currie, of Liverpool, from Dr W. Currie, of Chester.

Chester, August 15, 1802.

Dear Sir,

The fever-wards in the Chester Infirmary were opened for the reception of patients, in the year 1784. From that period, I constantly attended the Infirmary for sixteen years, and there never was at any one time reason to suspect that contagion had been communicated from the fever-wards to the other patients in the house. With proper attention to separation, ventilation, and cleanliness, patients, in fevers, may, I am confident, be admitted into every Infirmary, with the greatest benefit to the sick, and with the most perfect safety to the other patients. By an early removal of the sick from their own houses to the fever-wards, the future important object is obtained of checking the progress of contagion in the town.

When it is considered that the limited sphere of contagion is clearly ascertained, it is surprising that well-informed medical men can entertain doubts of the expediency of a measure that promises to be so highly beneficial to mankind.

I am,

In haste,

My dear Sir,

Yours very truly,

W. CURRIE.

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ERRATA.

Preface, Page 14, line 6, *read* see page 228.
—— —— 43, line 23, *for* object, *read* objects.
—— 54, last line, *for* page 2, *read* page 45.
—— 76, first line, *for* Falconar, *read* Falconer.
—— 101, line 22, *for* part, *read* fact.
—— 123, last line, *for* page 18, *read* page 12.